

# Mathematics

By a group of supervisors

PARENTS' GUIDE

Interactive E-learning Application

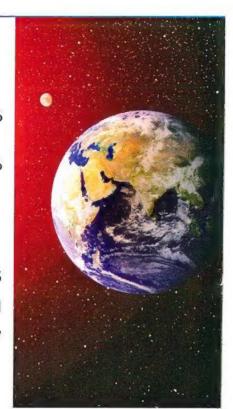




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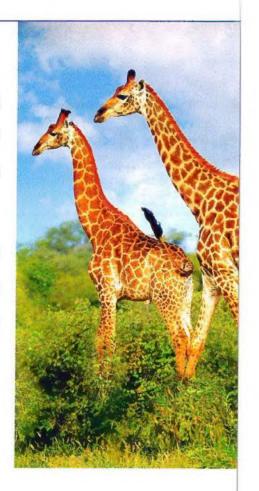
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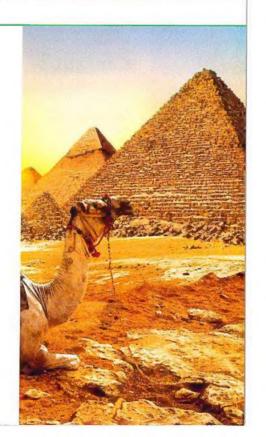
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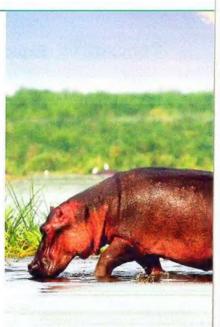
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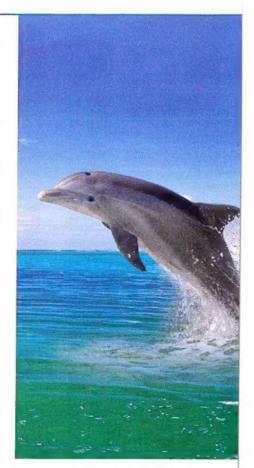
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## Concept 1 Order of Operations

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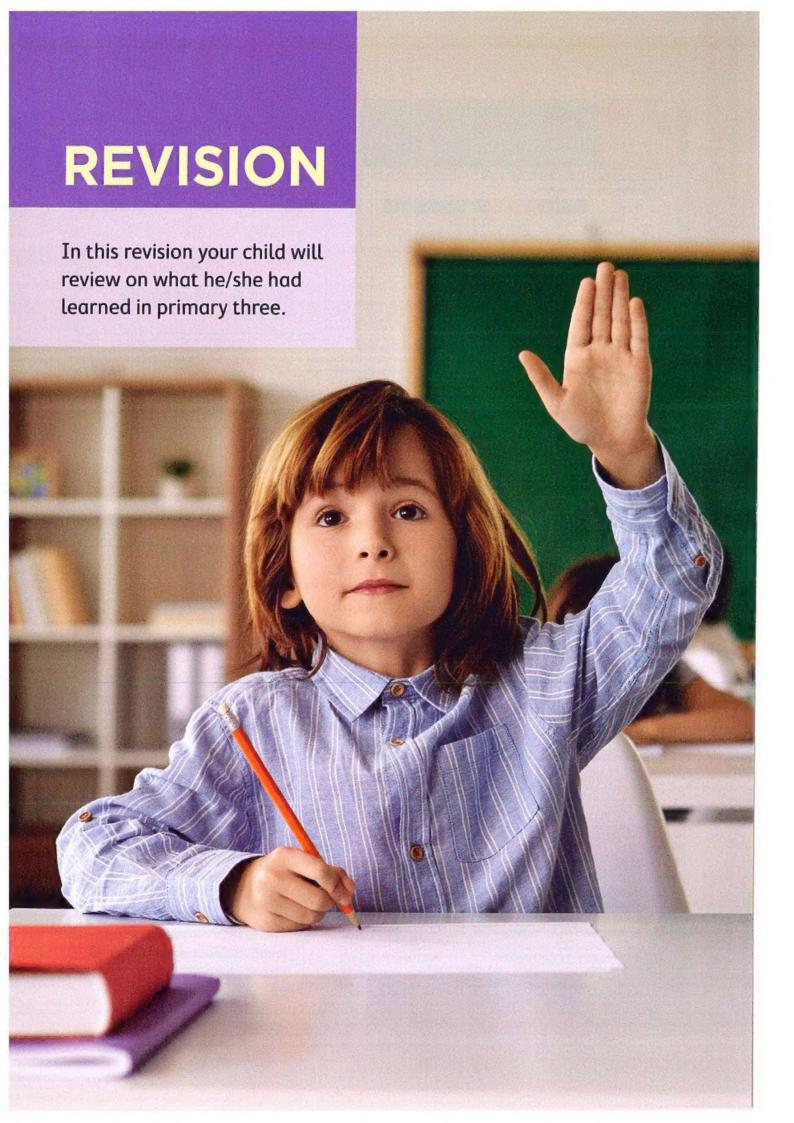
292 Story Problems





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## Revision 1

#### 1. Complete.

**b.** 30 thousands = ——— hundreds.

c. The perimeter of the rectangle 2 cm is \_\_\_\_\_ is \_\_\_\_ cm

d. The place value of the digit 4 in the number 46,385 is

e. Thirty-eight thousand, five hundred two in standard form is

4 cm

6 cm

#### 2. Choose the correct answer.

a. 
$$35 \div 7 = -$$

A. 5

B. 6

C. 7

D. 8

D. 3,928

**c.** 
$$8 \times - - = [8 \times 5] + [8 \times 2]$$



square cm.

#### 3. Arrange the following numbers from least to greatest.

#### 4. Find.

## Revision 2

#### Choose the correct answer.

a. 54,275 – 32,938 = –

**A.** 12,337 **B.** 21,373

C. 21,733

D. 21,337

**b.** 501,326 < —

A. 510,200

**B.** 501,236

C. 51,623

**D.** 56,632

c. 3 × 80 = \_\_\_\_

A. 24

B. 240

C. 2,400

**D.** 24,000

**d.**  $\frac{1}{7}$  of 28 = ----

A.  $\frac{1}{8}$  of 32

**B.**  $\frac{1}{5}$  of 30 5 cm C.  $\frac{1}{6}$  of 48

**D.**  $\frac{1}{9}$  of 18

e. The perimeter of the square

A. 20

B. 25

C. 10

**D.** 30

#### Complete.

- a. Eight hundred sixty-three thousands, five hundred seven in standard form is -
- **b.** The place value of the digit 7 in 762,435 is –

**d.** = 
$$100,000 + 7,000 + 30 + 5$$



3. A factory produces 800 cans of soft drink every day.

How many cans the factory produces in a week?

#### 4. Write the greatest number and smallest number can be formed from 9, 4, 0, 3, 1, 6.

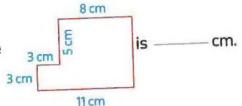
- The greatest number : ———

- The smallest number : ——

## Revision 3

#### 1. Complete.

- a.  $---\div 4 = 8$
- **b.**  $[5 \times 6] \times 7 = -$
- c. The perimeter of the shape



- d. 8,762 7,648 = -
- e. The smallest number formed from 2,7,0,6,5 is —

#### 2. Choose the correct answer.

- a. The value of the digit 3 in 721,362 is
  - A. 30,000
- B. 3,000
- **C.** 300
- D. 30
- b. The area of the rectangle whose length is 10 cm and width is 7 cm is ——— square cm.
  - A. 17

- B. 34
- C. 70
- D. 44

c. 
$$= 1,000 + 900 + 70 + 2$$

- A. 19,472
- B. 1,927
- C. 10,972
- D. 1,972

- A. 7,910
- B. 70,910
- C. 79,010
- D. 70,091

A. 6

- B. 5
- C. 7
- D. 8

## Arrange the following from least to greatest.

The order is: \_\_\_\_\_\_,

4. Bassem has 72 marbles, he wants to put each 8 marbles in a bag.

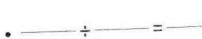
How many bags does Bassem need?

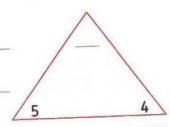
## 5. Find the product. Write the fact family.

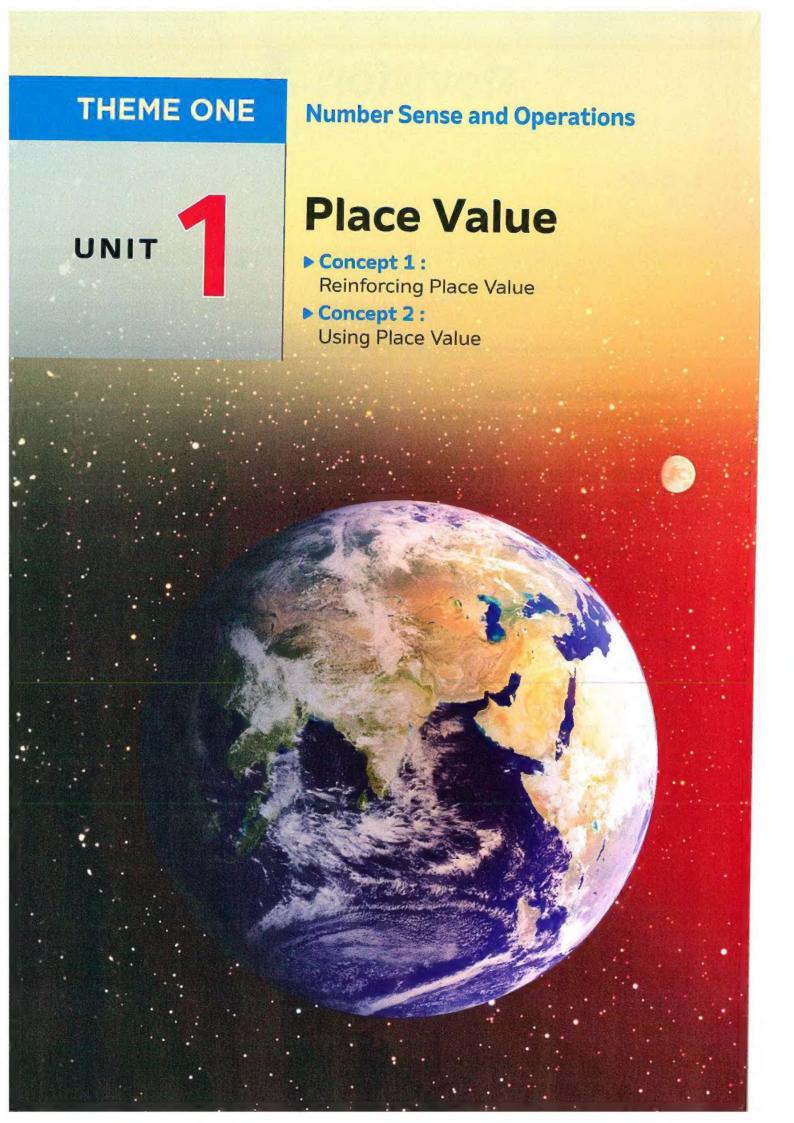












# CONCEPT

# Reinforcing Place Value

#### Lessons 1&2

Big Numbers! Changing Values

#### Learning Objectives:

- Students will identify all whole number place values through the One Milliard place.
- Students will explain how the value of a digit changes based on its place in a number
- Students will explain how the value of a digit changes as it moves to the left in a whole number.
- Students will describe patterns they observe in changing place values.

#### Lessons 3&4

Many Forms to Write Numbers Composing and Decomposing

#### **Learning Objectives:**

- Students will write numbers in standard, word, and expanded forms.
- Students will compose and decompose number in multiple forms.

#### **Fast Fact**

- ► The distance between the Earth and the Sun is about 149,598,000 km.
- ➤ The least distance from the Earth to the Moon is about 384,402 km. which equals 384,402,000 m.

Lessons

1&2

## Big Numbers!

Changing Values

#### Remember The place value

The value of each digit in any number depends on its place in this number.

#### For Example:

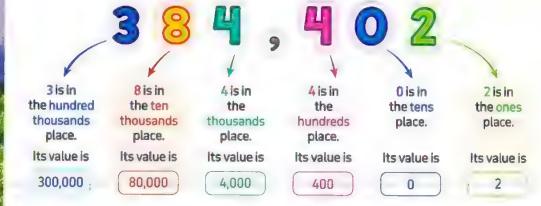
The least distance from the Earth to the moon is 384,402 km.

Notice the value of each digit in the number 384,402.

PERIOD —		PE	RIOD		
THOUSANDS		ONE			
Hundreds	Tens	Ones	Hundreds	Tens	Ones
3	8	4	4	0	2

#### Note that:

Each group of three digits is called a period. Each period has ones, tens and hundreds in it.



#### Example

Write the place value and the value of the colored digit.

	place value	value	
a. 79,285			
b. 980,7 <mark>5</mark> 8	,		I
<b>c. 2</b> 9,510			(
d. 220,089			(

## Colution (\*)

201d11011 g				
	place value	value		
a.	thousands	9,000		
b.	tens	50		
C.	ten thousands	20,000		
d.	hundreds	0		

#### Notes for parents:

Let your child remember that the position of a digit in a number determines its value.

## Learn 1 Really big numbers

#### Million

- You know that the greatest 6-digit number is 999,999.

  The number which comes just after 999,999 is 1,000,000. It is read as one million which is the smallest 7-digit number.
- To show 1,000,000 in the place-value chart, a period for Millions has to be added to the left of the Thoudsands period.

PE	RIOD -		PE	RIOD -		PERIOD ——			
MIL	LIONS		THOUSANDS			ONES			
Hundreds	Hundreds Tens Ones		Hundreds	Tens	Ones	Hundreds	Tens	Ones	
		1	0	0	0	0	0	0	

Written as: 1,000,000

Read as: One million

#### More about millions

Egypt population in 2020 was 102,334,404 look at this number on the place-value chart.



ŀ		PERIOD			PERIOD —			PERIOD —			
	MILLIONS			THOUSANDS			DIMES				
	Н	T	0	Н	Т	0	Н	T	0		
	1	0	2	3	3	4	4	0	4		
•	Hundred Millions place	Ten Millions place	Millions place	Hundred Thousands place	Ten Thousands place	Thousands place	Hundreds place	Tens place	Ones place		

#### This number read as:

One hundred two million, three hundred thirty-four thousand, four hundred four.

or in a short way: 102 million, 334 thousand, 404

#### Math tip

The place-value chart helps you read greater numbers. You say:
"102" then at the comma you name the period,
"million".

<sup>•</sup> Help your child apply and extend understanding of the place value system to multi-digit whole numbers.

#### Example 2

What is the place value and the value of each underlined digit?

583,460,905





Place value: Ten Millions

Value: 80 million Or: 80,000,000

Place value: Ten Thousands

Value: 60 thousand

Or: 60,000

Place value: Millions

Value: 3 million Or: 3,000,000

583,460,905

Place value: Tens

Value: 0 ten

Or: 0

### Milliard (Billion)

China has the world's largest population. In 1980, the population of China reached about 1,000,000,000. It is read as one milliard (or one billion).

To show 1,000,000,000 in the place-value chart, a column for Milliards has to be added to the left of the Millions period.



		PE	RIOD -		PE	RIOD -		PE	RIOD -	
1	MILLIARDS	MIL	LIONS		THOL	SAND:	5	0	NES	у
	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones
T	1	0	0	0	0	0	0	0	0	0

Written as: 1,000,000,000

Read as: One milliard

#### Notes for parents:

• Ask your child to tell you the value and the place value of each digit in the number : 243,019,507.

#### More about milliards

The world's population in 2020 was about 7,794,798,739 Look at this number on the place-value chart.

	P	ERIOD -		PE	RIOD -		PE	ERIOD -	
MILLIARDS	MI	LLIONS		THO	JSAND	5	Į ĝ	HE:	
0	Н	Т	0	Н	T	0	Н	T	0
7	7	9	4	7	9	8	7	3	9

#### This number read as:

Seven milliard, seven hundred ninety-four million, seven hundred ninety-eight thousand, seven hundred thirty-nine.

#### or in a short way:

7 milliard, 794 million, 798 thousand, 739



In the number 3,418,079,265, what digit is in the:

- a. Thousands place?
- b. Ten Millions place?
- c. Milliards place?
- **d.** Hundred Thousands place?

#### Solution [V]



a. 9

b. 1

c. 3

d. 0

#### How to read a large number?

- Divide the number (from right to left) into "periods" each period contains 3 digits.
- 6,208,196,318
- Use the place-value chart to help you read the large number.

<u> </u>	P	ERIOD -	+	P	ERIOD -	+	Р	ERIOD -	
MILLIARDS	MI	LLIONS		THO	USAND	S		JANES.	
0	Н	T	0	Н	T	0	Н	Т	0
6	2	0	8	1	9	6	3	1	8
6 milliard	208	million		196 t	housan	d		318	

· Help your child use periods to read multi-digit numbers in an easy way.

3 Start from the left and read the number in each period followed by the period name as follows.

Reading

6,208,196,318

Six milliard, two hundred eight million, one hundred ninety-six thousand, three hundred eighteen.

In a short way: 6 milliard, 208 million, 196 thousand, 318

#### Example 4 Choose the correct answer. **1.** 4 milliard, 103 million, 905 thousand, 484 = -**A.** 43,509,458 **B**. 403,590,548 **C.** 4,103,905,484 **D**. 4,950,854 2. Forty-three million, five hundred nine thousand, four hundred fifty-eight = -**A.** 43,509,458 **B.** 403,590,548 C. 4,103,905,484 **D.** 4,950,854 3. 403 million, 590 thousand, 548 = ----**A.** 43,509,458 **B.** 403,590,548 **C.** 4,103,905,484 **D.** 4,950,854 The value of the digit 3 in the Hundreds place is – A. 3 **B**. 30 C. 300 **D.** 3,000 Solution [V] 1. C 2. A B 4. C



- 1. In each of the following numbers.
  - underline the digit in the Hundred Thousands place.
  - circle the digit in the Ten Millions place.
  - draw a square around the digit in the Milliards place.
  - a. 7,561,492,048
- **b.** 3,914,500,721
- 2. Read the following numbers.
  - **a.** 912,031,301

- **b**. 70,804,230
- **c.** 5,003,521,216

- 3. What is the value of each of the following.
  - a. 8 in the Tens place?
- b. 5 in the Ten Thousands place?

#### Notes for parents:

Ask your child to write a number through milliard and then ask him/her to read it loudly.

## Learn 2 Changing place values

- The value of a digit changes as it moves to the left within a number.
- Our place-value system is based on tens. Each place value in this system is 10 times the one to the right of it.



×.	10 ×1	0 × 10	×10	×1	×	10
Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones
2	2	2	2	2	2	2
2,000,000	200,000	20,000	2,000	200	20	2

- A digit in one place equals 10 times the digit in the place to its right. For Example: The Hundreds place is 10 times the Tens place, so the value of 2 changes from 20 to 200.
- Observe the pattern in the number of zeroes.

## Example 5

#### Fill in the blanks below.

- a. The value of the digit 3 in the number 7, 431, 210 equals \_\_\_\_\_\_ times the value of the digit 3 in the number 4, 563, 809
- **b.** The value of 7 in the Thousands place = \_\_\_\_\_\_ times the value of 7 in the Tens place.
- **c.** \_\_\_\_\_ is 10 times one hundred thousand.
- d. 30 tens equals
- **e.** 7,000 thousands = ----

### Solution [7]



a. 10

**b**. 100

**c**. 1,000,000

- d.  $300 \text{ [think}: 30 \times 10 = 300]$  e. 7 [think: 7,000 thousands = 7,000,000]



#### your understanding

How does the value of 5 change as it moves from the Hundreds place to the Thousands place?

<sup>•</sup> Let your child understand that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right.

#### Exercise

1

on lessons 1&2

#### ▶ Big Numbers!

### Changing Values

REMEMBER

UNDERSTAND

O APPLY

PROBLEM SOLVING

.... From the school book

1. Complete the table as in the example.

		MILLIARDS	M	MILLIONS		THOUSANDS			ONES		
	Number	0	Н	Т	0	Н	T	0	Н	T	0
Ex.	5,604,453,987	5	6	0	4	4	5	3	9	8	7
a.	8,714,326,518									***************************************	
b.	753,009,300										
C.	7,354,621										
d.	8,000,300										
e.	923,508										

2.	In the	number 1	.542.3	45.678	. What	digit is	in	the
COLUMN TWO	111 4114	Francisco At		10,010	9 8411646	A11216 10		2112

- a. Tens place?
- c. One Thousands place?
- e. Ten Millions place?\_\_\_\_\_
- b. Hundreds place?
- d. Hundred Thousands place?
- f. One Milliards place?\_\_\_\_\_

3.	Write the value of the underline	d digit according	to its place i	n each number	as in
10	the example.				

- ▶ Example: 47,209,531 → 40,000,000
- **a.** 58,<u>4</u>86,098 —>
- c. 62,478,300 ----
- e. 24,041,683 ---
- **g.** 41,691,403 \_\_\_\_\_
- i. 669,<u>0</u>84,422 ---
- **k.** 30,30<u>3</u>,333 \_\_\_\_\_

- **b**. 3,784,168,411 ----
- d. 462,417 \_\_\_\_\_
- f. 8,000,418,617 ----
- h. 321,428,218 ->
- j. 7,261,909 ----
- l. <u>6</u>1,230,478 \_\_\_\_

(El-Monofia - Shebin El Koum 22)

4. Complete	e.
-------------	----

a. The place value of the digit 2 in the number 2,500,000 is	(Souhag 23)
<b>b.</b> The place value of the digit 3 in the number 1, 365, 854 is	
	[Giza - Abo El-Nomros 23]
c. The place value of the digit 3 in the number 23, 174, 265 is	
	[Giza - 6 <sup>th</sup> October 22]
<b>d</b> . The place value of the digit 9 in the number 91, 300, 122 is	[Alex Agmy 24]
e. The place value of the digit 0 in the number 5, 321, 041, 758 is	
f. The value of the digit 5 in the number 346, 251, 813 is	[Cairo 23]
g. The value of the digit 6 in the number 26,715, 324 is	[Cairo - Math's Inspection 23]
<b>h.</b> The value of the digit 6 in 61, 230, 478 is	(Kafr El-Sheikh 24)
i. The value of 2 in the Tens place =	
j. The value of 7 in the Hundreds place =	
k. The million is the smallest number formed from	_ digits.
t. The milliard is the smallest number formed from	_ digits.
m. The smallest number formed from the digits 9,7,6,8,3,1 and	nd 4 is
n. The smallest number formed from the digits 4, 2, 6, 0, 7, 5, 1a	and 3 is
o. The greatest number formed from the digits 8,1,3,4,5,0,9,	7 and 2 is
p. The greatest number formed from 7 digits is	
Complete.	
a. 75, 421, 392 = million, thousand,	
<b>b.</b> 2,500,422,300 = milliard,_ million,_	thousand,
<b>c.</b> = 701 million, 7 thousand, 700	
d = Two million, five hundred thousand, four hundred	twenty-two.
e = 9 milliard, 9 million, 9 thousand, 9	
f = 27 million , 27 thousand.	
g = Sixteen milliard, sixteen.	

## 6. Fill in the blanks as in the example.

► Ex. • 23,8ØØ = 238 hundreds.

• 60 tens = 600

75, ØØØ

• 750 hundreds =  $\frac{75}{100}$  thousands.

a.	56.	000	=	tł	าด	u	sar	nds	5
CH+	- $           -$	999		 -UI	10	u	201	IU.	

#### [El-Kalyoubia - Math's Inspection 23]

[Alexandria - Montaza 23]

7. .... Amir says that in the number 222, all of the digits have the same value. Do you agree or disagree? Use words and numbers to explain your thinking.

#### 8. Fill in the blanks.

- **a.** \_\_\_\_\_ is 10 times one hundred thousand.
- **b.** is 10 times two hundred.
- **c.** is 10 times seven thousand.
- d. Hundred thousand is \_\_\_\_\_ times ten thousand.

## Challenge

- 9. Use the digits 5,7,3,1,8,2,9 and 6 to make the greatest number you can, then use the same digits to make the smallest number you can.
  - The greatest is
- The smallest is
- How did the value of 7 change from the greatest number and the smallest number? Why did it change? Use words and numbers to explain your thinking.



# Multiple Choice Questions

#### Choose the correct answer.

1	. The digit in the Te	n Thousands place in the nu	ımber 1,351,278 is	[Luxor 24]
	A. 3	B. 2	<b>C</b> . 5	D. 1
2	The digit in the H	undred Thousands place in t		
	A. 1	B. 2	(El-Beheira 24)(El C. 4	l-Monofia - Al-Shohdaa 24) <b>D.</b> 9
3.	Million is the sma	llest number formed from _		- Se Destat El Calaca 2/1
	<b>A.</b> 5	<b>B</b> . 6	(Qena 24)(Ismailia 24)(El-Moi C. 8	D. 7
4.	Milliard is the sn	nallest number formed fro	om digits. C. 9	[El-Menia 24] <b>D.</b> 10
5.	The place value of A. Millions	f the digit 7 in the number 7 <b>B.</b> Ten Millions	7,213,455,686 is <b>C.</b> Milliards	[Kafr El-Sheikh 24] <b>D.</b> Ten Thousands
6.	The value of the d A. 60,000	igit 6 in the Ten Millions plac <b>B</b> . 6,000,000		[Kafr El-Shiekh 24] <b>D.</b> 600,000,000
7.	The value of digi	t 7 in number 7,125,801 is <b>B.</b> 70	C. 7,000	eira - Maths' Inspection 23) D. 7,000,000
8.	The value of digit A. 60	t 6 in number 2,476,217 is _ <b>B</b> . 600	C. 6,000	nia Official Lang. School 23] <b>D.</b> 60,000
9.	The value of the A. 0	digit 0 in the number 301,5 <b>B.</b> 100	72,941 is <b>C</b> . 1,000	<b>D</b> . 100,000
10.	The value of the A. 5 millions.	digit 5 in the number 2,456 <b>B.</b> 50 millions.	c. 50 thousands.	D. 500 thousands.
11.	The period of the <b>A.</b> Milliards.	underline digits in the nu	mber <u>25,613,729,114</u> is <b>C.</b> Thousands.	D. Ones.
12.	In which number A. 538,419	does the 8 have a value of <b>B</b> . 781,015	f eight hundred ? <b>C.</b> 271,825	<b>D</b> . 419,782
13.	The number in w A. 821,730,521	hich the digit 7 has the gre <b>B</b> . 152,007,000	c. 51,078,623	<b>D.</b> 7,810,521
14.	In the number 34, in the Tens place.  A. 10	042, the digit 4 in the Thou		times the digit 4 niro - Maths Inspection 22] <b>D.</b> 10,000
15.		ne space to the left on the p		
	A. 1	<b>B</b> . 10	<b>C.</b> 100	<b>D</b> . 1,000

# Lessons 3 & 4

- Many Forms to Write Numbers
- Composing and Decomposing

## **Learn 1** Many ways to write numbers

The distance between Jupiter and the sun is about 778, 340, 821 km.



Place-Value Chart

	MILLIONS			OUSAN	IDS	5485		
Н	Т	0	Н	T	0	Н	Т	0
7	7	8	3	4	0	8	2	1

Standard Form: 778, 340, 821

"Commas are used to show periods"

Expanded Form: 700,000,000 + 70,000,000 + 8,000,000 + 300,000 + 40,000 + 800 + 20 + 1

> "Zeroes are not needed in expanded form because there is nothing in that place value; as 0 in Thousands place".

Word Form: Seven hundred seventy-eight million, three hundred forty thousand, eight hundred twenty-one.

"Commas are used to separate Millions, Thousands and Ones periods".

Short-Word Form: 778 million, 340 thousand, 821.

#### Notes

- We use standard form most often.
- Numbers written in expanded form show the value of each digit.

#### Notes for parents:

• Your child may be confused about how to represent a place value with a 0 digit in expanded form. For example: 30,456 = 30,000 + 400 + 50 + 6. The 0 is not represented in expanded form because in standard form the 0 represents that there is nothing in that place value.



## Example 1

Write each number in standard form.

- **a.** 9,000,000,000+300,000,000+20,000,000+600,000+400+30
- b. Three milliard, six hundred million, five hundred forty thousand, six hundred fifty.

Solution [V



a. 9,320,600,430

**b.** 3,600,540,650

## Example 2

Write each number in word form.

- a. 4,008,011,091
- **b.** 60,000,000+7,000,000+200,000+40,000+500+10+3

Solution [V



- a. Four milliard, eight million, eleven thousand, ninety-one.
- b. Sixty-seven million, two hundred forty thousand, five hundred thirteen.

Example 3

Write each number in expanded form.

- **a.** 1,300,040,005
- **b.** 50,600,204

Solution [V]



- a. 1,000,000,000 + 300,000,000 + 40,000 + 5
- **b.** 50,000,000 + 600,000 + 200 + 4



your understanding

#### Complete.

- a. 5,000,000,000+70,000+1,000+40+9=(in standard form)
- **b.** Fifty-eight million, thirty-seven thousand, fourteen = (in standard form)
- **c.** 3,300,030,303 = -(in word form)
- **d.** 7,608,490 = -(in expanded form)
- Your child may struggle to say large numbers and need to be reminded to group the numbers into periods as he/she reads them aloud.
- Remind your child to use commas when writing numbers in the word form.



## Learn 2 Composing and decomposing numbers

- Composing numbers means (put together), and decomposing numbers means (broken apart).
- You can decompose the number 5,456,387 in different ways using place-value chart:

	MILLIONS		T	HOUSAND	S	ONES		
H T 0		H T O			H T O			
		5	4	5	6	3	8	7

▶ 1<sup>st</sup> way: Expanded Form:

5,456,387 = 5,000,000 + 400,000 + 50,000 + 6,000 + 300 + 80 + 7

▶ 2<sup>nd</sup> way:

 $5,456,387 = [5 \times 1,000,000] + [4 \times 100,000] + [5 \times 10,000] + [6 \times 1,000] + [3 \times 100] + [8 \times 10] + [7 \times 1]$ 

Example 4

Complete the following.

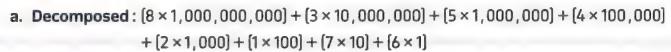
a. Composed: 8,035,402,176

Decomposed:

b. Composed:

**Decomposed**:  $(7 \times 1,000,000) + (9 \times 100,000) + (8 \times 1,000) + (2 \times 10) + (5 \times 1)$ 

Solution 🕎



b. Composed: 7,908,025



died your understanding

Complete the following.

a. Composed: 7,504,092,415

Decomposed:

b. Composed:

**Decomposed**:  $[3 \times 1,000,000,000] + [2 \times 100,000,000] + [5 \times 10,000,000] + [4 \times 100,000] + [7 \times 10,000] + [8 \times 1,000] + [6 \times 10] + [9 \times 1]$ 

Notes for parents:

- Make sure that your child knows the difference between the terms compose and decompose.
- · Make sure that your child knows how to represent a zero in a place when the number is decomposed.

### Exercise

# 2

c. 5,408,921,002

on lessons 3&4

- Many Forms to Write Numbers
- Composing and Decomposing

-	200.0	P & 4	400	-	April 1880
_		el la	EM		

	1100	N.A.	20.	-	0	TA	8.1	m
_	11111	311		ъ.	-	1.0	948	81

O APPU

ROBLEM SOLVING

From the school book

## Many forms to write numbers

1.	Write ea	each number in standard form.	
	a. Four	r hundred and nine.	[El-Monofia - Quesna 22]
	<b>b.</b> 34 m	million , 97 thousand.	(Giza - Kerdasa 22)
	c. Thre	ee million , two hundred fourteen thousand , nine hund	red thirty-six.
			(El-Menia - Samalot 22)
	d. Five	e hundred twenty-seven million, nine hundred thousar	nd, six hundred forty.
	e. Three	ee milliard, four hundred two million, seventeen.	
	<b>f.</b> 20,0	000 + 7,000 + 400 + 20 + 2	
	<b>g</b> . 70,0	000,000 + 126,000 + 450	(El-Menia - Der Mawas 22)
2.	Write th	he expanded form of each of the following.	
	<b>a.</b> 1,756	6,300 ———————————————————————————————————	
	<b>b.</b> 54,63	632,405	
		462,051	
	<b>d.</b> 9,989	39,791,985	
	<b>e</b> . 35 mi	nillion , 17 thousand , 230 ———————————————————————————————————	
		milliard , four hundred twenty million , three hundred fi fred three	fty-two thousand, one
3.	Write ea	ach number in word form.	
	a. 3,562	2,504	
	<b>b.</b> 54,21	13,450	

**d.** 700,000+60,000+20+9

**e.** 5,000,000,000+7,000,000+900,000+3,000+20

#### 4. Complete the following.

- a. The standard form of the number "3 million, 21 thousands and 509" is ——— (Alex. Agmy 24)
- b. The standard form of the number "one million, twenty-four thousand" is —

[Alex. - Agmy 24]

- c. The standard form of the number "6 million, 221 thousand" is ———— [Alex. - Agmy 24]
- **d.** 8 million, 555 thousand, 666 = ----(Cairo 24)
- e. 5 milliard, 5 thousand and 5 = (El-Menia 24)
- f. 4 milliard, 25 million, 67 thousand, 59 = -[Kafr El-Sheikh 24]
- g. Three millions, three thousands, three in standard form is (Giza 24)
- h. Five million, six hundred fifty thousand and sixteen is [Ismailia 24]
- i. 5,000,000 + 20,000 + 3,000 + 600 + 40 = ----- [standard form]. [Alex. 24]
- j. 700,000 + 40,000 + 2,000 + 300 + 70 + 2 =[El-Menia - Malawi 24]
- k. 4 + 500 + 3,000 + 800,000 = ---[El-Monofia - Berket El Sabaa 24]
- The number 6 million, 543 thousand, 210 in standard form is —

[Giza - October Gardens 24]

m. The standard form of the number 1 million, 235 thousand and 789 is (Souhag 23)

n. 7.625 = 5 + 7.000 + 20 + -(Aswan 23)

**o.** 3.000,000 + 8.000 + 400 + 30 + 3 = -[Alexandria - First Montaza 23]

#### Compsing and decomposing numbers

5. Decompose the following numbers using expanded form.

- b. 105, 208 = ---+ + ---+
- c. 601,207 = -[El-Menia 2022]
- **d.** 2 million, 277 thousand, 191 = -
- e. 17 million, 230 thousand, 14 = -
- f. Three milliard, one hundred thirty-seven million, six hundred nineteen thousand,

eighty-eight = -

- 6. Fill in the missing numbers. Use the place-value chart to help you.
  - a. Composed: 6,124,030,420

Decomposed:\_\_\_\_

MILLIARDS	M	IILLION	THOUSAN			IDS	()(x1E)		
0	Н	T	0	Н	Т	0	Н	Т	0

b. Composed:\_

Decomposed:\_

MILLIARDS	MILLIONS		TH	THOUSANDS			Falk5		
0	Н	Т	0	Н	Т	0	Н	Т	0
5	4	0	0	1	5	9	0	2	4

c. Composed:\_

Decomposed:  $(7 \times 1,000,000,000) + (5 \times 10,000,000) + (4 \times 10,000) + (3 \times 1,000) + (5 \times 100) + (9 \times 1)$ 

MILLIARDS	N	HILLION	15	JE TH	OUSAN	IDS	Qui E 5			
0	Н	Т	0	Н	Т	0	Н	Т	0	
								_		

7. Complete the table.

	Composed	Decomposed
а.	4,040,400	
b.		[2 × 1,000,000,000] + [5 × 1,000,000] + [6 × 100,000] + [7 × 1000] + [9 × 100] + [2 × 10] + 7
<b>C.</b>		9,000,000 + 50,000 + 3,000 + 700 + 60 + 9
d.	9,210,031,458	

Lessons 3 & 4 | • REMEMBER • UNDERSTAND • APPLY & PROBLEM SOLVIN

## Challenge

- 8. Write 16 ten thousands + 5 thousands + 64 tens in standard form.
- 9. Find two 9-digit numbers with the difference between them is one million.



and

## Multiple Choice Questions

#### Choose the correct answer.

- 1. The number building of the number: 2. The number 10 million, 175 thousand, 314 is 9,231,043,204 is called . form. written in the standard form... [Aswan 23] [El-Monofia - Al-Shohdaa 24] A. decomposed B. standard **A.** 10,157,314 **B.** 10,571,413 C. expanded D. word C. 10,175,314 **D.** 10,751,314 3. What is the standard form of eighteen 4. The standard form of 5 million, 36 thousand million, six hundred five thousand? and 206 is. [Cairo 23] [Alexandria - El-Montaza 22] **A.** 18,605,000 B. 81,605,000 **A.** 5,000,036,206 **B**. 5,036,206 C. 1,860,500 **D.** 18,650,000 C. 532,206 **D.** 5,360,206 5. The number 2 million, 300 thousand in Nine millions and six hundreds = standard form is \_\_\_\_\_ [El-Kalyoubia 23] (Souhag 24) **A.** 2,300,000 **B.** 2,000,300 A. 600,900 **B.** 900,600 C. 2,300 **D.** 2,003,000 C. 960,000 **D.** 9,000,600 8. 9,000,000 + 6,000 + 50 + 6 =7. The number 1 milliard, 235 million, 127 in [Port Said 24] standard form = -(Cairo 24) **A.** 1,235,000,127 **B.** 1, 235, 127 **A.** 9,656 **B.** 960,666 C. 1,272,351 **D.** 1,235,127,000 C. 6,569 **D.** 9,006,056 9. 5,000,000 + 40,000 + 5,000 + 600 + 3010. The number 173 million, 904 thousand, 562 +4=--[Cairo - Misr El Kadima 24] in standard form is (El-Dakahlia 22) **A.** 5,456,304 **A.** 173,000,904,562 **B.** 173,940,562 **B.** 5,045,634 C. 5,405,634 **D.** 504,534 C. 173, 904, 562 D. 173,562,904 11. The number 309,602 (in expanded form) **12.**  $[3 \times 1,000] + [3 \times 10] =$  [El-Menia 24] is\_ [Port Said 24] A. 300 **B.** 3,030 **A.** 2+60+900+3,000**C.** 3,300 **D.** 30,030
- 13. The composed number of  $(7 \times 100,000) + (2 \times 1,000) + (3 \times 100) + (5 \times 1)$  is

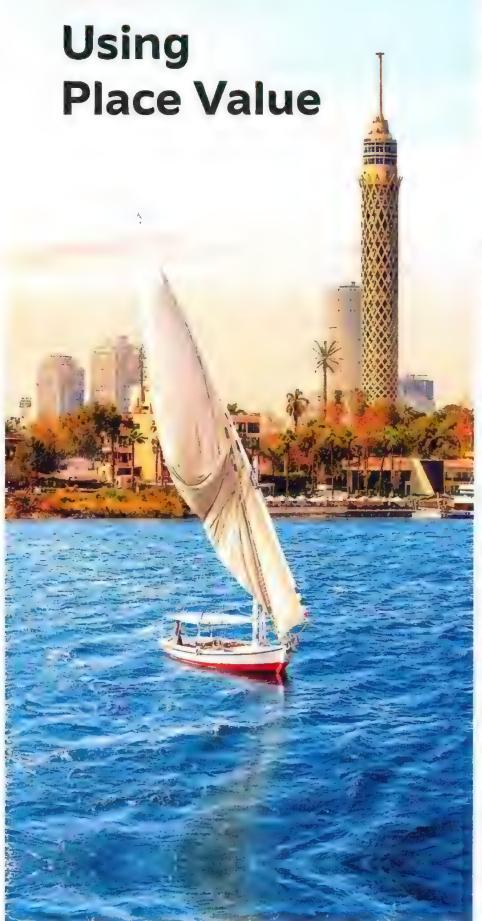
[Alex. - Agmy 24]

**A.** 720,351

B. 2+600+9,000+30,000
C. 2+600+9,000+300,000
D. 2+60+9,000+300,000

- **B**. 702,305
- **C.** 72,305
- **D**. 702,350

# CONCEPT 2



#### Lessons 5&6

Comparing Big Numbers
Comparing Numbers in Multiple Forms

#### Learning Objectives:

- Students will use place value to compare large numerals.
- Students will use symbols to express numerical comparisons.
- Students will compare numbers in multiple forms.
- Students will describe strategies for comparing numbers in multiple forms.

#### ▶ Lesson 7

**Descending and Ascending Numbers** 

#### Learning Objectives:

- Students will order numbers in multiple forms.
- Students will describe strategies for ordering numbers in multiple forms.

#### ▶ Lesson 8

Rounding Rules

#### Learning Objectives:

- Students will apply multiple strategies to round numbers.
- Students will discuss whether rounding or front-end estimation provide a more accurate estimate.

#### **Fast Fact**

The Nile River is the longest river in the world. It has a length about [6,659 kilometers]. Compare its length with the Amazon. The Amazon is about

(6,400 kilometers) long.

- Comparing Big Numbers
- Comparing Numbers in Multiple Forms



How to compare numbers?

#### First Comparing numbers have different numbers of digits

When comparing numbers, the number which has more digits is the greater.

For Example: 5,302,200 > 899,529

because 5,302,200 has more digits than 899,529

#### Second Comparing numbers have the same number of digits

 You can compare two numbers with the same number of digits by starting at the left and moving right until you come to a pair of digits that do not have the same value.

#### For Example:

To compare 12,673 and 12,763. Start at the left. Check each place until the digits are different.



Compare the Ten Thousands.

12,673

same digit of Ten Thousands

12,763

#### Step 2

Compare the Thousands.

12,673

same digit of Thousands

12,763

#### Step 3

Compare the Hundreds.

12,673

7 > 6

12,763

Then 12,763 > 12,673

#### More Examples:

- 754,042 < 755,950
- 42,437 > 42,347

- 755,972 < 1,752,421</li>
- 6,406,3676,406,367

#### Notes for parents:

Ask your child to consider how many digits are in a number when he/she compares.

## Example 1

Write (> < or =) to compare.

- **a.** 37,048
- 37,184
- c. 4,010,065
- 4,000,056

- **b.** 217,906
- 271,906
- **d.** 810,340
- 810,340

Solution 🕎

- a. 37,048
- 37/184
- c. 4,000,065 > 4,000,056

- b. 207,906 < 271,906
- d. 810,340 = 810,340

## Example 2

#### Complete.

- a. The smallest number formed from 3, 7, 1, 9, 2, 6, 5, is
- **b.** The smallest number formed from 8, 5, 0, 1, 3, 9 is
- c. The greatest number formed from 4, 2, 1, 3, 7, 6, 5 is —
- d. The greatest number formed from 5, 0, 6, 2, 1, 7, 4 is -

#### Solution V



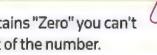
- To create the greatest number, arrange the digits from greatest to least.
- To create the smallest number, arrange the digits from least to greatest.
- **a.** 1, 235, 679

**c.** 7, 654, 321

- **b.** 103, 589
- **d.** 7, 654, 210

#### Note

If the digits contains "Zero" you can't put it on the left of the number.





#### your understanding

Write (>, < or =) to compare.

- a. 2,346
- 2,338
- **c.** 723,215
- 723,215
- **e.** 503,278,105
- 503,279,100

- **b.** 478,765 479,112
- d. 752,321,271
- 72,321,271
- f. 7,492,102,235
- 7,491,102,235

#### Notes for parents:

 If your child has difficulty making comparisons, let him/her first circle the place where the digits are different.

#### Learn

#### How to compare numbers in multiple forms?

- You can compare numbers in any forms: standard, expanded and word form.
- You may convert to standard form to compare, or use place value in expanded form or in word form to compare.

#### Example 2

Write (>, < or =) to compare.

70,000 + 4,000 + 50 + 7

70,000 + 4,000 + 500 + 70

Two milliard, seven hundred b. thirty-eight thousand, ten.

Two milliard, seven hundred thirty-five thousand, eleven.

C. 3,000,000 + 7,000 + 800 + 9

Three million, seven thousand, eight hundred nine.

 $(7 \times 1,000,000) + (5 \times 100,000)$ d.  $+(3 \times 1,000) + (4 \times 100) + (9 \times 1)$  7,000,000 + 500,000 + 3,000 +400 + 90

Solution [V]



a. <

b. >

c. =

d. <



#### your understanding

Write (>, < or =) to compare.

500,000 + 70,000 + 90 + 8a.

1,000,000 + 5,000 + 1

Three milliard, two hundred fiftyb. two thousand, three hundred four.

Three milliard, two hundred fifty-two thousand, thirty-four.

 $[8 \times 1,000,000] + [6 \times 1,000] +$ C.  $[5 \times 100] + [7 \times 10]$ 

 $[8 \times 1,000,000] + [2 \times 10,000]$  $+ [6 \times 1,000] + [5 \times 100] + [9 \times 1]$ 

2,000,000,000 + 400,000,000 d. +2,000+30+2

2,000,000,000 + 50,000,000 +8,000,000 + 9,000 + 50 + 9

· Your child may struggle with comparing numbers in word form or expanded form. He/she may convert to standard form to compare.

## Exercise

## 3

#### on lessons 5&6

- Comparing Big Numbers
- ► Comparing Numbers in Multiple Forms

	REMEMBE	R & ROESTAND > APRIL PROBLEM SOL	VING	From the school book				
1.	Comp	pare. Write (> , < or =).						
	<b>a.</b> 70	7 770	<b>b.</b> 1,2	07 1,207				
	<b>c</b> . 10,	525 10,255	<b>d.</b> 190	0,098 19,098				
	e. 😃	123,568 123,978	f. 🕮	6,235,678 6,235,508				
	g. 🔙	2,450,890,007 2,500,000,000	h. 7,79	7,798,567,999				
	i. 89	418,147 89,418,247	j. 571,600,254 571,600,329					
	<b>k</b> . 1,0	00,000,000 900,000,000	L. 100	0,000,000 99,999,999				
2. Compare. Write (>, < or =).								
	a.	40,000		400 thousands				
	b.	7 ten thousands		7,000				
	c.	7,000 millions		7 milliards				
	<b>d</b> .	5 milliards, 367 thousands		5,367,000,000				
	<b>e.</b>	Ninety-seven million, three hundred one		90,000,000 + 7,000,000 + 3,000 + 1				
	f. Idal	5,193,492,500		Five milliard, three hundred million, seven hundred fifteen thousand, forty-three.				
	g. $(7 \times 100,000,000) + (4 \times 10,000,00) + (9 \times 10,000) + (8 \times 100) + (1 \times 100$			70,000 + 9,000 + 600 + 40 + 3				
	h. ***	8,040,761,903		8,000,000,000 + 400,000,000 + 700,000 + 60,000 + 1,000 + 900 + 3				

i. : Seventeen million, four hundred twenty-five thousand, six hundred five.

17,420,605

j. — Four hundred twenty-three thousand, twelve

400,000 + 30,000 + 2,000 + 20 + 1

#### 3. Complete.

**a.** The smallest number formed from 8, 2, 9, 0, 5, 1, 7 =

(Souhag 24)

**b.** The smallest number formed from the digits 2, 0, 5, 3 is

[El-Monofia - Menof 24]

c. The smallest number formed from the digits 6, 0, 9, 8, 4, 2 and 3 is

(Port Said 24)

d. The greatest number consists of the digits 9, 5, 0, 2, 8 is

[Cairo - Helwan 24]

e. The greatest number formed from the digits 3, 7, 1, 0, 4, 2 is

(Port Said 24)

#### 4. Find each missing digit.

- a. 6,106 > 6 19
- **b.** 2,117 = [ ],117
- c. 4,382 < 4,3 2

- **d.** 91,472 > 9 \_\_\_\_,472
- e. 114,899 < 114, 99
- f. 703,9 1 = 703,981

- g. 11,234 > 1 ,785
- h. 67,813 > 67,8 3
- i. 82, 88 = 82,588

- j. 179,00 < 179,001
- k. 856, 34 < 856,134
- l. 683,129 < 6 3,129

#### 5. Write a number.

- a. Create a number that is less in the Hundred Thousands place than (<) 893,820
- b. Create a number that is greater in the Millions place than (>) 178,462,490

[Cairo - Heliopolis 23]

- c. Create a number that is less in the Ten Millions place than (<) 32,427,400
- d. Write a number in expanded form that is equal to [=] 2,445,232,197

## Challenge

- Describe the error in the following number sentence, and then explain how you would
   correct it. 24,152,614 < 24,125,614</li>
- 7. Which is greater, the number that is 1,000 less than 13,495 or the number that is 10,000 less than 23,495?

# Multiple Choice Questions

#### Choose the correct answer.

1.	62,234 ———	- 62,324 [Alex Al-Agamy 23]	2.	. 1,248,056	998,578				
	A. =	B. > C. <			(El-Monofia	- Sadat City 23)			
				A. >	B. <	<b>C.</b> =			
3.	6,235,678	6,235,508 (Beni Suef 24)	4.	2,450,890	- 2,500,000	(Alex. 24)			
	A. >	B. <	*	A. <	B. >				
	C. =	<b>D.</b> ≤		c. =	D. ≥				
5.	3,230,765	- 1,987,374 (Souhag 23)	6.	44,000,271	- 4,000,27	(Cairo 24)			
	A. <	B. =	•	A. >	B. <				
	C. >	D. ≤		c. =	D. non of the	em			
7.	45,254,369	45,678,124 [Alex. 23]	8.	55,000,888	51,999,777	(Souhag 24)			
•	A. >	B. =	•	A. <	B. >				
	C. <	<b>D.</b> ≥		<b>C.</b> =	<b>D</b> . ≤				
9.	3,000 thousand 9 hundred			<b>10.</b> 501 thousand — 3,000 thousand					
9		(Alex Agmy 24)	(Alex Ag						
	A. >	B. < C. =		A. >	B. <	c. =			
11.	9 million –	8,978,269	12.	6 million, 40	0 thousand ———	6,040,000			
<b>(5)</b>		(El-Monofia - Menof 24)	•			El-Monofia 24)			
	A. <	B. =		A. <	B. =				
	C. >	D. Otherwise		C. >	D. Otherwis	е			
13.	Which of the fol	lowing statements is		Which numb	er sentence is <b>NOT</b>	TRUE?			
	TRUE ? (Cairo - Heliopolis 23)		<b>A.</b> 2,304 < 2,340						
	A. 4646 < 4664  B. 4646 > 4664  C. 4664 > 4664  D. 4646 = 4664			B. 27,920 > 27,790 C. 1,005,301 > 1,050,901					
				D. 80,044 «	90 404				

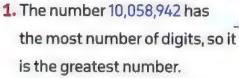
## **Descending and Ascending Numbers**



## **Learn** Ordering numbers

The table shows the population of four governorates in Egypt in 2021.

You can order the governorates by their population from greatest to least as follows:



2. The number 450,528 has the least
number of digits, so it is the least number.

3.	Compare 5,452,718 and 5,510,876 which have
	the same number of digits.
	Check each place until the digits are different

	-

Governorate	Population
Cairo	10,058,942
North Sinai	450,528
Alexandria	5,452,718
Souhag	5,510,876

Step 1		Step 2	
Compare the M	lillions.	Compare the Hun	dred Thousands.
5,452,718   	same digit of Millions	5,452,718	5 > 4
	Then: 5,510,876	5,452,718	

#### From above:

In order of their population, the governorates are Cairo, Souhag,
 Alexandria and North Sinai.

#### Notes for parents:

· Remind your child to start comparison at the greatest place value.

## Example 1

Write these numbers in an ascending order.

2,896,016

1,188,580

2,517,550

#### Solution [7]

Step 2



Step 1	Write the numbers, lining up places. Determine the smallest number.	
--------	---	--

16 0 ← smallest

2,896,016

1,188,580

Write the remaining numbers, lining up places. Compare.

2,517,550 ← smaller

Step 3 Write the numbers from least to greatest.

2,517,550

2,896,016

Remember ----

Ascending order is ordering

numbers from least to

greatest.

## Example 2

Write each of the following numbers in standard form, then arrange them in a descending order.

- $(7 \times 1,000,000,000) + (4 \times 10,000,000) + (5 \times 1,000) + (3 \times 100)$
- Seven milliard, four hundred million, one thousand, two
- 7,000,000,000 + 500,000,000 + 600,000 + 300
- 745,300

#### Solution 🐷



Standard form	Descendingly
7,040,005,300	7,500,600,300
7,400,001,002	7,400,001,002
7,500,600,300	7,040,005,300
745,300	745,300



Descending order is ordering numbers from greatest to least.





### your understanding

Arrange the following in a descending order, using the standard form.

- Three milliard, forty million, seventy-one thousand, ten.
- $[3 \times 1,000,000,000] + [5 \times 1,000,000] + [7 \times 1,000] + [1 \times 100] + [1 \times 10]$
- $\bullet$  3,000,000,000 + 30,000,000 + 10

• 3,300,710,400

#### Notes for parents:

- If your child has trouble ordering numbers, ask him/her to align the numbers vertically and compare digits from left to right.
- Remind your child about the meaning of the two terms ascending order and descending order.

## **Descending and Ascending Numbers**

•	REMEMBER & WYLEYSIANG PROBLEM SOLVING	From the school book						
1.	Write the numbers in an ascending order.							
<b>(</b>	<b>a.</b> 8,092,561 , 9,208,111 , 7,534,786 , 8,650,336	[El-Beheira 23]						
	The order is:,,	,						
	<b>b.</b> 1,282,756 , 3,012,427 , 988,423 , 3,105,338 The order is: , ,	[El-Monofia - Sadat city 23]						
	c. 430,000,459 , 43,000,549 , 403,000,456 , 430,549,000 The order is: ,							
2.	Write the numbers in a descending order.							
	a. 450,321 , 504,321 , 321,405 , 342,150 , 540,312 (Giza 2							
	The order is:	,						
	b. 6,562,942,735 , 6,942,735 , 6,562,942,375 , 6,942,537							
	The order is:,,	,						
	<b>c.</b> 4,237,651 , 4,273,653 , 495,627 , 4,237,690							
	The order is:,	,						
3.	List the following data in a descending order. You may use we Three milliard, ten million, one thousand, thirty-four.							
	• Three milliard, one million, three hundred twenty-three thousand, three hundred ninety-one.  • Three milliard, nine hundred ninety thousand nine hundred ninety three							
	<ul> <li>Three milliard, nine hundred ninety thousand, nine hundred ninety-two</li> <li>Three milliard, one hundred ten million, ninety-nine thousand, four hundred ninety-three.</li> </ul>							

4.	List the	following	in an	ascending	order. (	Jse	standard	form.
----	----------	-----------	-------	-----------	----------	-----	----------	-------

a. • 654,301

• Six hundred fifty-four thousand, three hundred ten.

• 604,320

• 654,311

• Five hundred ninety-nine thousand, three hundred ten.

The order is: -

**b.** • 
$$3,000,000 + 400,000 + 5,000 + 3$$

• Three million, four hundred fifty thousand, three.

• 3,453,000

• 3,450,030

The order is: -

#### 5. List the numbers in a descending order. Use standard form.

a. • Two milliard, four million, seven hundred thousand.

• 2,400,700,000

• 2,040,007,000

Three milliard.

The order is: -

#### **b.** • 5,000,000,000 + 40,000,000 + 5,000,000 + 7,000 + 90

- $\bullet \left( 6 \times 1,000,000,000 \right) + \left( 3 \times 10,000,000 \right) + \left( 5 \times 1,000,000 \right) + \left( 6 \times 10,000 \right) + \left( 9 \times 100 \right)$
- Five milliard, forty-one million, seven thousand, ninety
- 6,000,000,000 + 40,000,000 + 5,000,000 + 10,000 + 7,000 + 90
- 6,025,060,990

The order is: -

<ul> <li>a</li></ul>					
<ul> <li>b. • Nine million, seven hundred thirty-one th</li> <li>• 90,731,007</li> <li>• 9,000,000 + 700,000 + 40,000 + 50</li> <li>The order is:</li> </ul>	• 900,080,500	d million, eighty-four.			
7. List the numbers in a descending order. Use a. • 900 thousand.	the form in which th	ey are given.			
• 5 million and 7 hundred thousand.  The order is:	• 550,223	(Giza - El-Haram 22			
<ul><li>b. • Four milliard, six hundred thousand, four.</li><li>• 461,014</li></ul>					
<ul> <li>Four milliard, six hundred thousand, forty.</li> <li>[4 × 1,000,000,000] + [4 × 100,000] + [6 × 1</li> <li>6,400,042</li> </ul>					
The order is:					
Challenge					
The following numbers are arranged in a desc	ending order:				
$3,751,924,096 \longrightarrow 3,751,924,069 \longrightarrow 3,751,624,096 \longrightarrow 3,751,624,069$ If you replace each 6 by 9 and each 9 by 6, what do you notice?					

#### Choose the correct answer.

- 1. Which of the following shows the numbers in a descending order?
  - **A.** 580,735,757,573

**B**. 735,508,573,757

**C.** 735,757,573,580

- **D.** 757,735,580,573
- [Giza Awseem 22]

2. Which of the following is a correct ascending order?

(Cairo - Heliopolis 23)

**A.** 757, 573, 508, 735

B. 573,757,735,580

C. 573,580,735,757

- **D.** 580,573,757,735
- 3. Which choice shows the numbers in a descending order?
  - **A.** 1. 3,456,871
- **B.** 1. 7,456,232
- C. 1. 5,786,321
- **D.** 1. 1,263,572

- 2. 3,578,462
- 2. 6,785,000
- 2. 5,795,786
- 2. 12,213,573

- 3. 987,541
- 3. 6,670,785
- 3. 5,895,432
- 3. 4,262,563

- 4. 5,743,261
- 4. 5,700,726
- 4. 6,721,000
- 4. 1,000,000,000

- 5. 8,784,561
- 5. 5,700,624
- 5. 7,000,000
- 5. 7,865,321,000

- 4. Given the following numbers:
  - a  $[6 \times 100,000] + [4 \times 10,000] + [5 \times 1,000] + [3 \times 100] + [1 \times 1]$
  - b Six hundred fifty-three thousand, three hundred, ten.
  - c 604,302
  - d Five hundred eighty-eight thousand, three hundred, ten.

Which choice shows these numbers in an ascending order?

- A. a, c, b, d
- B. d, c, a, b
- C. d, b, a, c
- D. d, a, c, b
- 5. Which of the following digits makes the sentence true ? 785 > 7 5 > 755
  - A. 2

B. 4

C. 6

- D. 8
- 6. The table below shows the average distances from the planets to the Sun.

	_			
Planet	Jupiter	Mars	Venus	Earth
Distance from the Sun in km	778,340,821	227,943,000	108,209,000	149,598,000

Which planet from above is nearest to the Sun?

- A. Jupiter
- B. Mars

C. Venus

D. Earth

8

## **Rounding Rules**



### Learn

#### Different ways to round a number

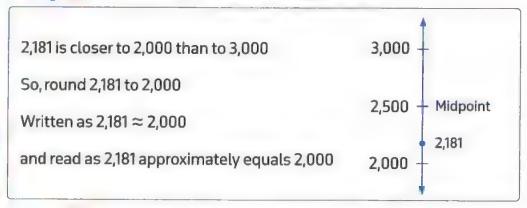
A roller coaster that is 2,181 meters long. About how long is the roller coaster?

Since you do not need an exact number, you can **estimate** by **rounding** the number.



Different Ways to round 2,181 to the nearest thousand.

Way 1 You can use (midpoint strategy).



## Way ? You can use (place value strategy)

#### Step 1 Step 2 Step 3 Find the place you Look at the If the underlined digit is 5 or want to round to. greater, round up. digit to its right. Circle the digit in that Underline that • If the underlined digit is place. digit. less than 5, round down. Change each digit to the right **(2), 181** (2), 181 of the rounding place to 0 1 is less than 5, so Thousands digit to 2,181 rounds to place the right

Then, the roller coaster is about 2,000 meters long.

#### Notes for parents:

 Remind your child to round up if the digit to the right of the place value he/she wants to round to is equal to or greater than 5.

## Example

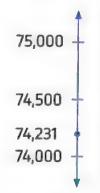
#### Use the midpoint strategy to round each of the following.

a. 74,231 (to the nearest 1,000)

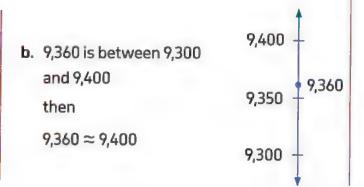
Solution [V]

a. 74,231 is between 74,000 and 75,000 then

 $74,231 \approx 74,000$ 



**b.** 9,360 (to the nearest 100)



## Example 2

#### Use the place value strategy to round each of the following.

- **a.** 2,618 (to the nearest 10)
- c. 3,697,852,721 (to the nearest Ten Million)
- e. 999,999 (to the nearest Ten Thousand)
- **b.** 174,568 [to the nearest 10,000]
- d. 7,556,462 (to the nearest Million)
- f. 13,999,999 (to the nearest Hundred)

## Solution [V



c. 
$$3,697,852,721 \approx 3,700,000,000$$

$$5 = 5$$
 d.  $\sqrt{3}556,462 \approx 8,000,000$ 

f. 
$$13,999,999 \approx 14,000,000$$

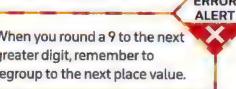
#### Rounding Rule:

Circle the digit, look next door. 5 or higher? Add one more. 4 or less? Let it rest.

#### Remember

The digits to the right become zeroes.

When you round a 9 to the next greater digit, remember to regroup to the next place value.



#### your understanding

#### Round the following.

to the nearest **a.** 85,721 1,000

to the nearest **c.** 3,895

- **b.** 3,562,291
- to the nearest

#### Notes for parents:

If necessary, allow your child to write the standard form of the number before rounding.

## Exercise

## 5

## on lesson 8

## **Rounding Rules**

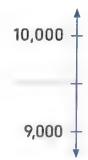
● REMEMBER ● UNDERSTAND ○ APPER	PROBLEM SOLVING	From the school book	
1. Round the numbers to the ne	arest Ten.		
a. 423≈ b. 549≈		d. 1,287≈	
2. Round the numbers to the ne	arest Hundred.		
<b>a.</b> 874≈ <b>b.</b> 416≈	<b>c.</b> 4,398≈	— <b>d.</b> 1,952≈——	
3. Round the numbers to the ne	arest Thousand.		
a. 8,090≈	<b>b.</b> 234,432 ≈ -		
<b>c.</b> 9,900≈	<b>d.</b> ♣ 7,578 ≈ – –		
4. Round the numbers to the nea	arest Ten Thousand.		
a. 37,205≈	<b>b.</b> 58,936≈	_	
<b>c.</b> ⊆ 290,290 ≈——	<b>d.</b> 40 7,435,026,3	353≈	
5. Round the numbers to the nea	arest Hundred Thousand.		
a. 483,267≈———	<b>b.</b> 678,090 ≈	<del></del>	
<b>c.</b> 449,300 ≈ ———	<b>d.</b> 12,786,500 ≈ -		
6. Round the numbers to the nea	arest Million.		
<b>a.</b> ≦ 5,367,544 ≈			
<b>c.</b> 135,984,600 ≈ —	d. 🕮 2,453,000,		
7.  Round the numbers to the	nearest Milliard.		
<b>a.</b> 5,266,747,023≈——	<b>b.</b> 10,944,352,543	3≈	
8. Complete.			
a. 3,446≈—— (to the nea	arest Thousand]	[Cairo 24]	
<b>b</b> . 56,621≈ — [to the ne	earest Thousand)	[Alex El-Montaza 24]	
c. The number 543,186 to the ne	(Cairo - Heliopolis 22)		
d. The number 163,518,943 to t	he nearest Million is ———	(Matrouh 22)	
e. 34,279 ≈ — (to the nearest Ten Thousand) (El-Monofia - Sadat City			
<b>f.</b> 4,369 ≈ — (to the nea	rest 100)	(Cairo - El-Nozha 23)	
g. 16,401≈ - (to the nearest Thousand) [Alex El-Montaza			

9. Round each of the following by using the midpoint strategy, record the midpoint of the number line and the place of each number, then round to the nearest Thousand.

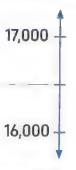




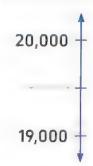
**b.** ⊈ 9,340 ≈ —



**c.** ∰ 16,401 ≈ —



**d.** 19,654 ≈ -



- 10. Draw the number line, label the midpoint, and then round each of the following numbers.
  - a. 250,000 (to the nearest Hundred Thousand)
- **b.** 700,500 (to the nearest Hundred Thousand)
- c. 362,261 (to the nearest Ten Thousand)
- d. 36,951 (to the nearest Hundred)
- 11. Write 5 numbers if rounded to the nearest Thousand the result is 312,000.



12. What is the greatest whole number that rounds to 300,000? What is the least?

## Multiple Choice Questions

#### Choose the correct answer.

1.	6,438 ≈ 6,400 (	to the nearest]	2.	25,638 ≈ 26,000 (ro	ounding to the		
		(El-Menia - Dier Mawas 24)	7	nearest ———	_]	(Giza 24)	
	A. Unit	B. Ten		A. Ten thousand	B. Thous	and	
	C. Hundred	D. Thousand		C. Hundred	D. Ten		
3.	3,965,832≈4,0	00,000 to the nearest (Cairo 24)	4.	2,357≈ [ nearest Ten]	rounding to th	ie (Giza 23)	
	A. Million	B. Milliard		<b>A.</b> 2,360	<b>B</b> . 2,358		
	C. Hundred Th	ousand <b>D</b> . Ten Thousand		<b>C</b> . 2,350	<b>D</b> . 2,400		
5.		mating the number 3,629 Hundred, the result (Souhag 23)	6.	A bee hive contains number of bees to Thousand is		-	
	A. 3,600	<b>B</b> . 3,700		{El-Mon	ofia - Berket El-	Sabaa 23)	
	C. 3,000	<b>D</b> . 3,620		<b>A</b> . 100,000	<b>B.</b> 10,000		
		2.3,020		<b>C</b> . 102,010	<b>D</b> . 12,090		
<b>(3)</b>	7. 614,231≈ —— (rounding to nearest Hundred Thousand)			8. Rounding the number 34,089 to the nearest Ten Thousand is			
		[Alex. Agmy 24]		[Be	ni Suef 24)(El-SI	narkia 22 l	
	<b>A</b> . 600,000	<b>B</b> . 700,000		A. 34,000	<b>B</b> . 34,090	,	
	<b>C</b> . 614,000	<b>D.</b> 4,000		<b>C.</b> 30,000	<b>D.</b> 35,000		
	Rounding the r	number 3,854,125 to the	10. Which answer represents rounding 32,582,346 to the nearest Million?				
		(Giza - October Gardens 24)		(Giz	a - Awseem 23)	(Suez 22 )	
	<b>A.</b> 2,000,000	<b>B.</b> 3,000,000		<b>A</b> . 30,000,000	<b>B</b> . 32,600,	ດດດ	
	<b>C</b> . 4,000,000	<b>D</b> . 5,000,000		<b>C</b> . 32,000,000	<b>D</b> . 33,000		
				C. 32,000,000	<b>D</b> , 33,000		
6		colud be rounded to	12.	Round 6,749,001,551	to the neares	it	
		ounded to the nearest Ten	.,,	Milliard.	(Ben	i Suef 22]	
	Thousand?	[Suez 22]					
	<b>A</b> . 125,678	<b>B</b> . 116,034		<b>A</b> . 6,000,000,000	<b>B</b> . 7,000,00	0,000	
(	<b>C</b> . 112,625	<b>D</b> . 20,789		C. 6,700,000,000	<b>D</b> . 8,000,00	00,000	

## **Unit One Assessment**



#### 1. Choose the correct answer.

1.	The digit in ten th	[El-Menia 23]					
•	A. 3	B. 4	<b>C.</b> 7	<b>D.</b> 8			
2.	Milliard is the sm	allest ———— - digit ni	umber.	(Cairo 23)			
•	<b>A</b> . 5	<b>B.</b> 10	<b>C.</b> 9	<b>D.</b> 8			
3.	The place value o	f the digit 6 in 56,724,033	3 is ———	[El-Beheira - Math Inspection 23]			
	A. Thousands.		B. Hundred	Thousand.			
	C. Millions.		D. Ten Millie	on.			
4.	The value of the o	ligit 3 in 53,496,752 is —		(Aswan 23)			
	<b>A</b> . 30	<b>B</b> . 30,000	<b>C</b> . 3,000,00	<b>D.</b> 300,000			
5.	Rounding the nur	mber 34,089 to the neare	st Ten Thousan	d is ———			
,)				[Cairo - Heliopolis 23]			
	<b>A.</b> 34,000	<b>B.</b> 34,090	<b>C</b> . 30,000	<b>D.</b> 35,000			
6.	The standard form of: three hundred thirty-two million, forty-five thousand, two						
•	hundred five is —			(Cairo - Helwan 24)			
	<b>A</b> . 205,045,332	<b>B</b> . 332,045,205	<b>C.</b> 231,430,2	<b>D</b> . 231,043,042			
	3,752,000 ———	three milliard, twenty.					
9	A. >	B. <	C. =				

## 2. Complete the following.

1.	One million is the smallest number formed from — — digit	s. [Aswan 23]
2.	The smallest number formed from the digits 9, 4, 2, 6, 0, 5, 1 is —	(Giza 24)
3.	The value of the digit 6 in 61,230,478 is	(Cairo - Misr El-Kadima 24)
4.	The place value of 2 in the number 6,268,503 is	(Kafr El-Sheikh 24)
5.	80,000,000 + 124,000 + 650 =	
6.	$735,462 \approx$ [Rounded to the nearest Ten Thousand]	
7.	3,504,800,501 in expanded form is ————	
8.	5,856,469 ≈ 5,900,000 [Rounded to the nearest]	

7	Choose	460	correct	DISCUSSION.
- To	CHOOSE	uie	correct	answer.

1. Rounding 32,582,346 to the nearest Million equals —

[Cairo - Misr El-Kadima - 24]

- **A**. 30,000,000
- **B**. 32,600,000
- C. 32,000,000
- **D**. 33,000,000

- The largest 5-digit number is
  - A. 10.000
- B. 100,000
- C. 99,999

**D**. 98,765

- 3. 100,000 is times the number 10,000
  - A. 10
- **B**. 100

**C**. 1,000

- **D**. 10,000
- 4. What is the standard form for three milliard, seven hundred thirty-five thousand, fifty?
  - **A.** 3,735,000,050
- **B**. 3,735,500
- **C.** 3,000,735,050
- **D.** 3,735,050
- 5. Rounding the number 765,017 to the nearest Hundred Thousand is [Alex.-Al-Agamy 23]

- **A.** 770,000
- **B**. 800,000
- **C**. 700,000
- **D.** 760,000
- **6.**  $[6 \times 1,000,000] + [5 \times 100,000] + [3 \times 1,000] + [2 \times 100] = -$ **A.** 2,305,600
  - **B.** 3,605,200
- C. 6,305,200
- D. 6,503,200
- 7. The place value of the digit 3 in the number 5,316,725,891 is -

(Ismailia 24)

[Port Said - 24]

A. Milliards

B. Hundred Millions

C. Ten Millions

D. Hundred Thousands

#### 4. Answer the following.

- 1. A plane's altitude increased by 2,721 meters. Round this number to the nearest Hundred.
- 2. Use the digits 7,4,2,0,3,5,6,8 to make the greatest number you can. Then use the same digits to make the smallest number you can and round each number to the nearest Million.
- 3. Arrange the following numbers in: 6,362,012 / 2,265,698 / 13,561,954 / 5,364,569

[Giza - October Gardens 24]

- a. A descending order: —
- b. An ascending order: ——
- 4. Compose and decompose the following number.

MILLIARDS	1	<b>4ILLION</b>	S	TH	IOUSAN	IDS		ONES	
0	Н	T	0	Н	Т	0	Н	T	0
2	8	0	5	4	0	0	6	9	3

Composed: -

Decomposed: -

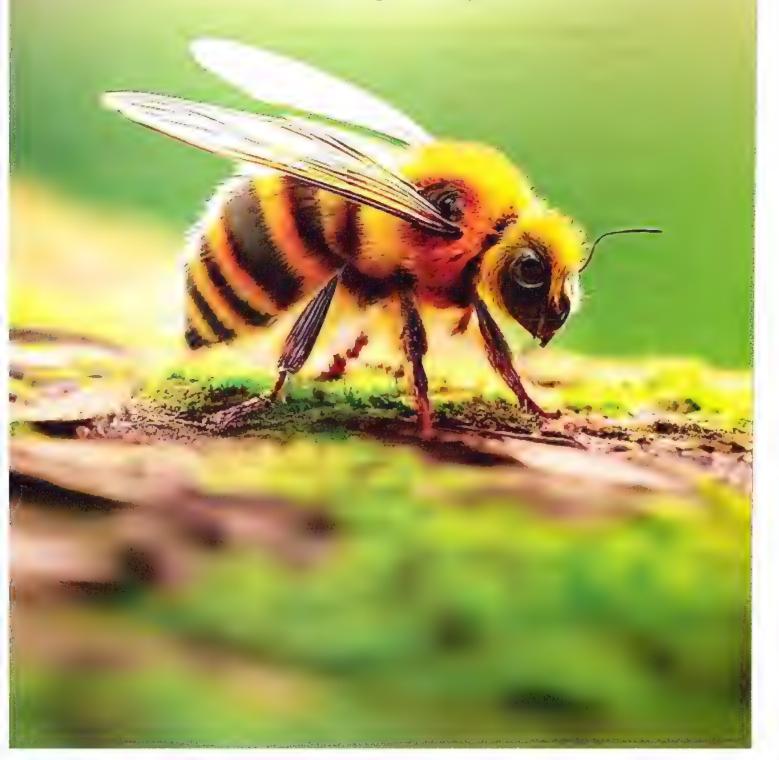


**Number Sense and Operations** 

UNIT 2

## Addition and Subtraction Strategies

- ► Concept 1:
  Using Addition and Subtraction Strategies
- ► Concept 2 : Solving Multistep Problems



## CONCEPT

## Using Addition and Subtraction Strategies



#### Lesson 1

**Properties of Addition** 

#### **Learning Objectives:**

- Students will identify the properties of addition and subtraction.
- Students will explain the properties of addition and subtraction.
- Students will investigate to determine whether addition properties apply to subtraction.

#### ▶ Lesson 2

**Addition with Regrouping** 

#### Learning Objectives:

- Students will add multi-digit whole numbers.
- Students will estimate to determine if their answer is reasonable.

#### ▶ Lesson 3

Subtraction with Regrouping

#### **Learning Objectives:**

- Students will use place value to help subtract using the standard algorithm.
- · Students will subtract with regrouping.
- Students will estimate to check the reasonableness of their answers.

#### **Fast Fact**

There are over 12,000 ant species worldwide.

There are about 20,000 different species of bees in the world.

What is the difference between them ?!

## **Properties of Addition**



### What are the addition properties?

Addition properties are rules for addition that are always true.

Commutative property.
 Identity property.

Associative property.

### **Commutative Property of Addition**

Sara has two boxes of apples. One of them contains 15 apples and the other one contains 10 apples

How many apples are there in the two boxes?

Sara said

Ahmed said

$$10 + 15 = 2$$

So, you can note that 10 + 15 = 15 + 10



You can add numbers in any order and get the same sum.

### **Identity Property of Addition**

Maged saw 8 fish. Shady did not see any. How many fish did the boys see in all?

If you add zero to any number, the sum is that number.

$$0 + 8 = 8$$

So, the boys saw 8 fish in all.

#### **Associative Property of Addition**

Bassem collected 7 brown shells, 4 white shells, and 6 gray shells. How many shells did he collect in all?

So, 
$$[7+4]+6=7+[4+6]$$
.

Bassem collected 17 shells in all.

Parentheses [ ] show which numbers to add first.

You can group addends in different ways, and the sum will be the same.

#### Notes for parents:

· Let your child give you more examples for each property and ask him/her to explain what each property states.



## Example 1

Find the missing number, and name the property you used.

a. 
$$12 + 64 = ----+12$$

c. 
$$[1+19]+11=1+[19+\cdots]$$
 d.  $90+\cdots=90$ 

## Solution [7]



- a. 64 [commutative property]
- c. 11 [associative property]

- **b.** 14 (additive identity property)
- d. 0 [additive identity property]

## Example 2

Solve each problem, and name the property you used.

a. 
$$12 + 28 + 30$$

**b.** 
$$16+9+4$$

c. 
$$12 + 28 + 15 + 35$$



a. 
$$12+28+30$$
 Use the associative

$$= (12 + 28) + 30$$
 property to group

easy to add mentally.

**b.** 
$$16+9+4$$

$$= 16 + 4 + 9$$
 (com

[commutative property]

$$= [16+4]+9$$
 [associative property]

$$=$$
 20 +9  $=$  29

c. 
$$12 + 28 + 15 + 35$$

$$= (12 + 28) + (15 + 35)$$
 (associative property)

$$= 40 + 50 = 90$$



## your understanding

Complete the following.

a. 
$$42 + - - = 18 + 42$$

**c.** 
$$[14 + 16] + 37 = 14 + [16 + ---]$$

**d.** 
$$17 + 23 = 23 + 17$$
 is property.

**e.** 
$$[136 + 13] + 37 = 136 + [13 + 37]$$
 is property.

f. 
$$968 + 0 = 0 + 968 = 968$$
 is — property.

Solve the problems, then name the property or properties illustrated by each problem [commutative, associative or additive identity].

Property: —

Property: —

Property: -

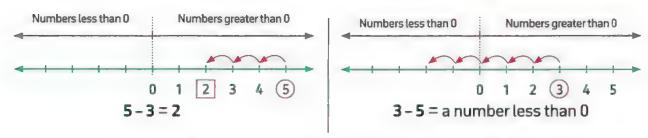
Let your child know that he/she could use more than one property to solve a problem.

## Do the addition properties apply to subtraction?

#### ▶ Is 5 - 3 the same as 3 - 5?

You can use the number line to answer.

You will study the numbers less than 0 later in coming years.



From the above:  $5-3 \neq 3-5$  [The differences are NOT the same]

You can not subtract numbers in any order and get the same difference.

So, commutative property of addition *does not apply* to subtraction.

#### ▶ Subtraction has no identity.

There is no number you can subtract from any number, or subtract any number from it, the difference is that number.

▶ Is (5-3)-2 the same as 5-(3-2)?

$$[5-3]-2=2-2$$
  $5-[3-2]=5-1$   $= 4$ 

From the above:  $(5-3)-2 \neq 5-(3-2)$  [The differences are NOT the same]

You can not group in different ways, and the difference will be the same. So, associative property of addition *does not apply* to subtraction.



#### Notes for parents:

Ask your child to create a subtraction problem to investigate if the addition properties apply to subtraction.
 Let your child explain using words.

#### Choose the correct property.

**a.** 
$$[12+8]+7=12+[8+7]$$

**b.** 
$$25 + 75 = 75 + 25$$

c. 
$$[45+5]+10=45+[5+10]$$

**d.** 
$$13 + 0 = 13$$
 [Giza - Abo El-Nomros 23]

**e.** 
$$26 + 10 + 34 = 26 + 34 + 10$$

[Additive identity - Commutative - Associative]

#### 2. Complete.

a. 
$$5+9=9+$$

**b.** 
$$[61+23]+24=---+[23+24]$$

**d.** 
$$359 + 12 = 12 + 359$$
 is called — property.

#### Complete to find the sum.

a. 
$$92 + 321 + 8 = 92 + 8 + 321$$

property)

c. 
$$199 + 1 + 40$$

-+--==---

4. Solve the following problems using the associative property. Remember to solve what is in the parentheses first.

a.	[75 + 25] + 46	75 + [25 + 46]	[75 + 46] + 25	
	= 100 + 46 = 146	=		

5. Find each sum in two different ways. Use parentheses to show which numbers you add first.

a. 
$$30 + 70 + 15$$

$$c. 220 + 88 + 80$$

**b**. 
$$11 + 26 + 34$$

d. 
$$12 + 28 + 30 + 25$$

6. Use the properties of addition to solve each problem.

a. 15 + 18 + 12

b. 41 + 36 + 19

c. 421+9+29

**d.** 342+4+8+46

**e.** 730 + 17 + 13 + 20

## Challenge

7. Yahia needs to find the sum of 24, 35, 105 and 66. How can he group the addends to make it easier to add? Write the property used in each step.



#### Choose the correct answer.

1. 13 + 0 = 13, is — property.

[Assiut - Manfalout 22]

A. assocciative

**B.** commutative

C. additive identity

- D. none of the above
- 2. 19 + 36 = 36 + 19, is \_\_\_\_\_ property.

[El-Beheira 23]

A. commutative

B. additive identity

C. associative

D. otherwise

3. 
$$[15+19] + 20 = 15 + \{19+20\}$$
, is ———— property.

[Alex, 24]

A. additive identity

B. commutative

C. distributive

D. associative

The additive identity element is –

(Ismailia 24)(Alex. - El-Montaza 23)

A. 3

B. 2

C. 0

D. 1

5.  $25 + 24 = 24 + \dots$ 

(Beni Suef 24)

A. 24

B. 25

C. 99

**D**. 100

**6.** 352 + (556 + 421) = (352 + - + 421)

[Alex. 24]

- **A.** 352 \_\_\_
- **B.** 556
- C. 421

D. 782

**7.** [222 + 111] + 333 = 222 + [111 + \_\_\_

[Cairo 24]

- **A.** 888
- B. 111

C. 333

- D. 666
- 8. Which of the following represents the commutative property in addition? [El-Fayoum 22]

**A.** 635 + 492 = 492 + 635

**B.** 0 + 847 = 847

**C.** [18+2]+16=36

- **D.** 1+131=132
- 9. Which equation would be best to include in an explanation of the commutative property of addition? [El-Menia - Matay 22]

A. 8+0=8

B. 7+8=8+7

C. 3+18=3+11+7

D, 5+8=3+10

## Adeliation with Regarduping



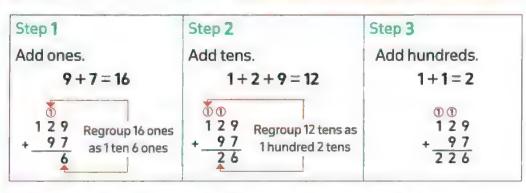
#### Learn

Mr. Faried has 129 kids toys. He plans to buy 97 more toys. How many toys will he have altogether?



**Estimate.** 100 + 100 = 200

(Numbers are rounded to the nearest 100)



Mr. Faried will have 226 toys, and the answer is close to the estimate. So, 226 is reasonable.

## Example 1

Round the addends to the nearest given estimation. Find the sum.

## Solution W

a.

Round to

$$\begin{array}{c}
10 \\
34 \\
+88 \\
\hline
122
\end{array}$$

Round to

 $\begin{array}{c}
10 \\
+90 \\
\hline
120
\end{array}$ 

The answer is reasonable.

Round to
$$658 \xrightarrow{100} 700$$
 $+135 \xrightarrow{} +100$ 
 $800$ 

The answer is reasonable.

The answer is reasonable.

#### Notes for parents:

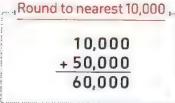
 Ask your child to find the sum of 3,659 and 1,783, then use rounding to estimate and check if the answer is reasonable or not.

## Example 2

Estimate using rounding to the nearest Ten Thousand, Thousand, Hundred and Ten to check the reasonableness of the answer. Find the exact answer.











#### Note

The exact answer is more reasonable to estimation using rounding to the nearest Ten than rounding to the nearest other place values.



Tris in

your understanding

- a. b. 7 4, 3 9 8 + 6 8, 6 2 2
- 2. Find the exact sum. Estimate using rounding to check the reasonableness of the answer.



Ç.

1. Find the sum with regrouping.

b.

d.

C.

Let your child create an addition problem and let him/her solve it to find the exact answer, then use rounding to check the reasonableness of the answer.

## **Exercise**

#### on lesson 2

## Addition with Regrouping

#### REMEMBER

PROBLEM SOLVING

From the school book

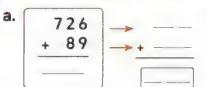
#### 1. Estimate using rounding to the nearest Ten. Find the exact answer.

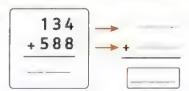






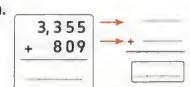
#### 2. Estimate using rounding to the nearest Hundred. Find the exact answer.

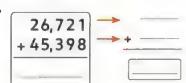




C.

#### 3. Estimate using rounding to the nearest Thousand. Find the exact answer.



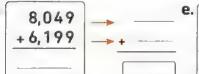


#### 4. Round to estimate the sums. Then, solve the problems to find the exact answers.

#### Show your work.

b. . . .

d. \_



#### 5. Find the exact sum. Estimate using rounding as the examples.

► Examples: • 5,432 + 1,296 = 6,728

• 17,686 + 5,342 = 23,028

a. 17 + 69 = -

-+		=	
----	--	---	--

c. 4,584 + 2,428 = -

-		+		=		
---	--	---	--	---	--	--

- **e.** 25,749 + 175,684 = --
- ----

- **b.** 523 + 387 = ----+-=-
- **d.** 69,210 + 26,428 =
  - = =
- f. 259,111 + 9,999 =
  - -+--=

#### 6. Complete.

- a. 227 + 293 = ---
- **b.** 539 + 62 = -
- **c.** 8,049 + 2,931 = ----
- **d.** 14,275 + 15,725 = ----
- **e.** 25,865 + 3,459 = ----
- $\mathbf{f.} \ 91,024 + 32,549 = -$
- $\mathbf{g}$ . 26,720 + 45,280 = -
- **h.** 523,523 + 377,137 = -

- [Giza 24]
- [Alex. First Montaza 23]
  - [Aswan Noba 23]
    - [Luxor 24]
    - [Cairo 24]
- [El-Beheira Hosh Essa 23]
  - [Giza 23]
  - [Souhag 24]

- 7. Find the sum. Compare using (>, < or =).
  - a. 65 + 17
- 38 + 43
- c. 3,984 + 1,079
- 894 + 4,117
- e. 90,652 + 21,911 37,888 + 84,675
- **b.** 290 + 530
- 732 + 88
- **d.** 5,182 + 957
- 3,777 + 2,350
- **f.** 54,186 + 11,983

#### 8. Answer the following problems.

- a. If 273 ships passed through the Suez Canal in January and 375 ships crossed in February. Find the total sum of ships in the two months. [El-Menia 23]
- b. A bridge of ants consists of 142 ants, and another bridge consists of 165 ants. How many ants are there in the two bridges together?



(Cairo - 23) (El-Beheira - Damnhour 22)

- c. Mona has 5,235 L.E., her father gave her 2,365 L.E. How much money does Mona have now? [El-Menia 24]
- d. In a week, 7,825 tourists visited Karnak temple, and in the next week, 8,245 tourists visited it. How many tourists visited the temple in the two weeks? [Alex. 24]
- e. Heba bought a mobile for 21,675 L.E. and a laptop for 18,325 L.E. How much money did Heba pay? [Cairo 23]
- f. Ahmed and Omar participated in a project, Ahmed paid 342,650 pounds and Omar paid 245,950 pounds.

Find the total cost of the project. [Alex. - Agamy 23]

g. If 149,000 visitors visited the Great Pyramid in January and 125,000 visitors visited it in February. What is the total numbers of visitors in the two months? [Alex. - Agamy 24] h. The country has provided a vaccination against the Corona virus. In the first stage, 1,653,465 people were vaccinated and 3,312,447 in the second stage. What is the total number of people vaccinated in both stages?



[Giza - Dokki 22]



9. Complete the missing digits.

a.	7	_,	3	4	
+		2,		2	5
	9	8,	6		8



## **Multiple Choice Questions**

#### Choose the correct answer.

A. 207

**C.** 307

D. 18

[Alex. - El-Montaza 23]

A. 41,248

B. 14.428

C. 14,248

D. 4,428

(Aswan 23)

A. 123,563

**B.** 123,673

C. 122,563

**D.** 123,573

[Giza - Haram 22] [Cairo - Rod El-Farag 23] 4. The sum of 1,225 + 5,774 = -

A. 6,900

B. 6,999

C. 6,555

**D.** 6,565

[Cairo - Helwan 24]

5. Which one is the sum of + 2,715 ?

**A.** 2,253

**B.** 6,283

C. 7,273

**D.** 7,283

6. Which one is the sum of + 24,654?

A. 83,053

**B.** 83,261

58,607

C. 83,361

**D**. 83,853

A. 8

B. 80

C. 800

**D.** 8,000

8. 31,632 + 62,435 = -

A. 67 + 94

B. 67 + 940

C. 67 + 9,400

D. 67 + 94,000

#### 9. Which one is the correct rounding to estimate the answer of 192 + 266?

**A.** 100 + 200 = 300

B. 200 + 200 = 400

**C.** 100 + 300 = 400

**D.** 200 + 300 = 500

10. Which one is the correct rounding to estimate the sum of 1,564 + 387?

**A.** 1,500 + 300 = 1,800

**B.** 1,500 + 400 = 1,900

**C.** 1,600 + 400 = 2,000

**D.** 1,600 + 500 = 2,100

#### **11.** Which has the same sum as 654 + 1,698?

A. 519 + 1,832

**B.** 1,394 + 958

C. 1,863 + 571

D. 754 + 1,898

**12.** 78,912 ----

71,147 + 7,765

A. >

B. <

C. =

#### 13. Heba bought a laptop for 13,350 pounds and a TV set for 8,750 pounds.

What is the total money did she pay?

A. 21,000 pounds C. 22,100 pounds

**B.** 21,100 pounds

D. 23,000 pounds



## Subtraction with Regrouping



## Learn

A factory produced 3,675 cartons of juice in a month. In the next month, the factory produced 7,869 cartons of juice.

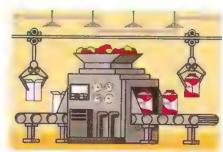
Find the difference between the number of cartons of juice in the two months.

Subtract. 7,869 - 3,675

Estimate. 8,000 - 4,000 = 4,000



Use the standard subtraction algorithm.



	Step 1	Step 2	Step 3	Step 4
	Subtract the ones.	Regroup hundreds.	Subtract the hundreds.	Subtract the thousands.
1	7, 8 6 9	Subtract the tens.  7 16  7, 8 6 9	7 16	7 16
get a	- 3, 6 7 5	_ 3, 6 7 5	7, 8 6 9	7, 8 6 9
	4	9 4	1 9 4	4, 1 9 4

So, the difference is 4,194 cartons of juice.

The answer is close to the estimate, so 4,194 is reasonable.

#### Note that:

7, 8 6 9 
$$\xrightarrow{\text{Round to}}$$
 7, 9 0 0  
- 3, 6 7 5  $\longrightarrow$  - 3, 7 0 0  
4, 1 9 4 4, 2 0 0  
(It is more close to the exact answer)

7, 8 6 9 
$$\xrightarrow{\text{Round to}}$$
 7, 8 7 0  
-3, 6 7 5 -3, 6 8 0  
-4, 1 9 4 -4, 1 9 0

[It is more close to the exact answer than rounding to Thousand or rounding to Hundred]

#### Notes for parents:

 The exact answer is more reasonable to estimation using rounding to the nearest 10 than rounding to the nearest other place values.

## Example

Find the difference. Round to the given estimation to check the reasonableness of the answer.

- a. 531 278 [Round to the nearest Ten]
- **b.** 7,419 1,742 [Round to the nearest Hundred]

Solution [V]



[The answer is reasonable]

b. 6 × 11 X, X X 9 Round to 100

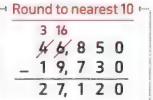
[The answer is reasonable]

## Example 2

Estimate using rounding to the nearest 10, 100, 1,000 and 10,000 to check the reasonableness of the answer. Find the exact difference. 46,853 - 19,729

#### Solution [V





## Exact difference \_ 1 9, 7 2 9 2 7, 1 2 4

The exact difference is more reasonable to estimation using rounding to the nearest 10 than rounding to 100 , 1,000 or 10,000



your understanding

Solve the following problems using the standard subtraction algorithm. Then, round each number to the nearest Ten, Hundred Thousand or Ten Thousand to check the reasonableness of your answers.

a. 4,271 - 1,834

- **b.** 52,329 31,255
- **c.** 608,452 109,786

· Remind your child to look at each exercise carefully and decide how he/she needs to regroup before proceeding.

#### **Exercise**

on lesson 3

## Sulphinocation which Reservoiring

REMEMBER

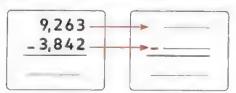
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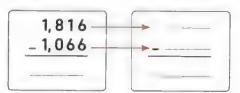


From the school book

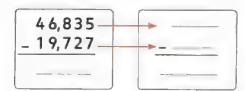
1. Use the standard subtraction algorithm to solve the problems. Then, round each number to the nearest Thousand to check the reasonableness of your answer.



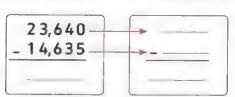
C.

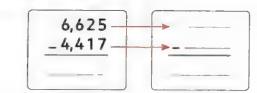


e.

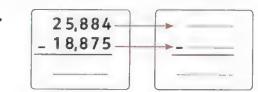


g.

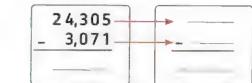




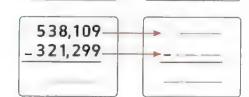
d.



f.



h.



2. Use the standard subtraction algorithm to solve the following problems. Then round to the nearest Thousands to check the reasonableness of your answer as the examples.

Examples: • 
$$8,746 - 2,873 = 2,373$$

\$\displain 5,000 - 3,000 = 2,000

83,000 - 58,000 = 25,000

**b.** 3,458 - 2,064 = -

**d.** 70,623 - 30,611 = -

 $\mathbf{f}$ . 853,004 - 45,878 = -

**h.** 721,010 = 350,891 = -

#### 3. Complete.

a. 3,728 – 1,596 = ——

[El-Monofia - Al-Sadat 24]

**b.** 2,617 - 1,716 = -

[El-Beheira 24] [El-Monofia 24]

c. 4,725 - 3,482 = -

[Qena 23]

**d.** 2,615 – 1,309 = ---

(Cairo - Rod El-Farag 23)

**e.** 8,742 - 2,136 = -

(Souhag 23)

**f.** 69,263 = 25,185 = -

(Port Said 24)

**g.** 862,492 - 657,837 = -

[El-Monofia 24]

**h.** 284,615 - 196,392 = -

(Kafr El-Sheikh 24)

i. 5,000 - 2,451 = -

[Cairo 24]

j. 8,000 - 3,999 = -

[Cairo 23]

#### 4. Find the results, complete using (>, < or =).

- **a.** 3,250 137
- 3,250 731
- **b.** 7,431 250
- 9,302 250

- **c.** 849 598
- 1,000 750
- d. 12,926 + 19,809
- 57,400 24,865

- **e**. 18,654 367
- 10,000 + 8,000 + 200 + 80 + 7

#### 5. Solve the following story problems.

a. A road of 675 km length. If a train traveled a distance of 239 km from this road.

What is the remaining distance of the road?

(El-Beheira 23) (Alex. - Montaza 23)

b. Hassan has 8,460 pounds. He bought a phone for 3,650 pounds.

Find the money remained with him.

[Alex. 23]

C.	There are 7,258 ants in the colony. 2,147 ants are females and the rest are males.					
	How many males are in the colony?	[Souhag 23]				

- **d.** There are 20,000 ants in the colony. If 1,500 ants went out to find food, how many ants did not leave the colony?

  [Cairo 24]
- e. Samir and Mohamed participated in a project.
  Samir paid 342,650 pounds. If the cost of the project is 668,500 pounds, how much is
  Mohamed paying?
  [El-Menia 22]



f. If the population of Matrouh Governorate is 517,901 people, and the population of South Sinai Governorate is 112,211, then what is the difference between the population of Matrouh Governorate and the population of South Sinai Governorate?

(El-Gharbia - Qotour 22)

(El-Monofia - Berket El-Sabaa 23)



g. Mohamed has 15,000 L.E. He bought a computer with 7,250 L.E. and a mobile with 4,750 L.E. Find the reminder with him.

(Cairo - El-Salam 23)



h. 🔛 A trap jaw ant wanted to cross a river that was 3,548 cm across. The ant had already swum 1,672 cm. How much farther does the ant have to go?



i. Was Two colonies of fire ant were stuck in a flood and made floating rafts to survive. The first colony had approximately 1,267 ants and the second had 3,452 ants. How many more ants were in the second colony?

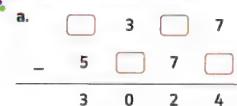


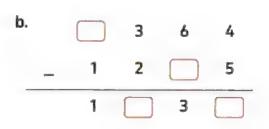
j. 🕮 A fire ant colony has 255,000 ants. A Gigantiops destructor ant colony has 6,200 ants. What is the difference between the size of the two colonies?



## Challenge

6. Write the missing digits.





## Multiple Choice Questions

#### Choose the correct answer.

4	557	283 =
	221 -	205 -

(El-Monofia 24)

- A. 763
- B. 274
- C. 427
- D. 724

2. Subtract: 613 - 247 =

[El-Menia 24] (Cairo 22]

[Cairo - Al-Khalifa 23] [El-Beheira - Hosh Essa 23]

- **A.** 567
- **B**. 434
- **C.** 366
- D. 807

**3.** 1,325 – 820 = –

[Kafr El-Sheikh 24]

- **A.** 305
- **B.** 405
- **C.** 505
- D. 1,505

**4.** 5,683 – 2,647 = —

[Giza - October Gardens 24]

- **A.** 3,030
- **B**. 3,036
- C. 3,044

**5.** 6,458 – 2,566 = –

[Cairo 24]

**A.** 3,892

C. 3,928

- **B.** 2,892
- **D**. 2,928

6. 3,328 - 2,164 = ---

(Aswan 23)

- **A.** 1,641
- **B.** 1,614
- C. 1,164
- D. 1,146

457,206 7. Find the difference: -124,680

8. 8,000 - 2,345 = ----

[Cairo 23]

- A. 10,345
- B. 6,345
- **C**. 5,655
- **D**. 5,565

- **A.** 332,486
- **B.** 332,526
- **C.** 333,486
- **D.** 333,526

- 9. 125,217 + 2,345 -
- 125,217 2,345

(Giza 23)

A. >

B. <

C. =

10. A local bakery sold 1,232 zalabya in one day. If they sold 876 zalabya in the moring, how many were sold during the rest of the day?

[Beni Suef 22]

- A. 356
- **B.** 520

- C. 1,588
- **D**. 2,108

11. If Ahmed had 100 pounds, and the sum of what he and his friend had was 350 pounds.

How much money did his friend have?

- A. 250
- **B**. 150

**C**. 100

**D**. 50

# CONCEPT 2

## Solving Multistep Problems



#### Lesson 4

Bar Models, Variables and Story Problems

#### Learning Objectives:

- Students will use letters to represent unknown quantities in equations.
- Students will use bar models to represent and solve story problems.
- · Solve for the variable in an equation.

#### Lesson 5

Solving Multistep Story Problems with Addition and Subtraction

#### Learning Objectives:

- Students will solve multistep story problems.
- Students will explain how they solved multistep story problems.

#### **Fast Fact**

Female kangaroos sport a pouch on their belly (made by a fold in the skin) to cradle baby kangaroos, called joeys. If a female weighs 35 kg, and weighs holding her joey 38 kg. What is the weight of her joey? Lesson

4

# Bar Models, Variables and Story Problems

Learn 1

How do you write a number sentence to solve a problem?

Suppose you have 225 L.E. to spend. How much money will you have left if you bought the soccer socks?

ar Sale!	
90 L.E.	
120 L.E.	
225 L.E.	
	120 L.E.



What strategy will you use?

**Strategy:** Write a Number Sentence using bar models.

[Where: n shows the money left]

Whole

	225 L.E.
90 L.E.	
Part	Part

1. From the bar model:

$$90 + n = 225$$

2. Subtract to find n

$$n = 225 - 90$$

$$n = 135$$

Answer: You will have 135 L.E. left.



#### **Look Back and Check**

**Is your answer reasonable?** 90 + 135 = 225 Yes, it checks.

#### Notes for parents:

 Ask your child: Why is subtraction used for this problem? He/she may answer "Subtraction is used because I need to find the part that is left".

## How to use a bar model to solve an equation?

You can represent the number sentence:
 3+2=5 by the opposite bar model.

1	5
3	2

• Study the following bar model and its facts:

who	le: A
part: B	part: C

A = B + C

Add to find the whole.



Subtract to find a part

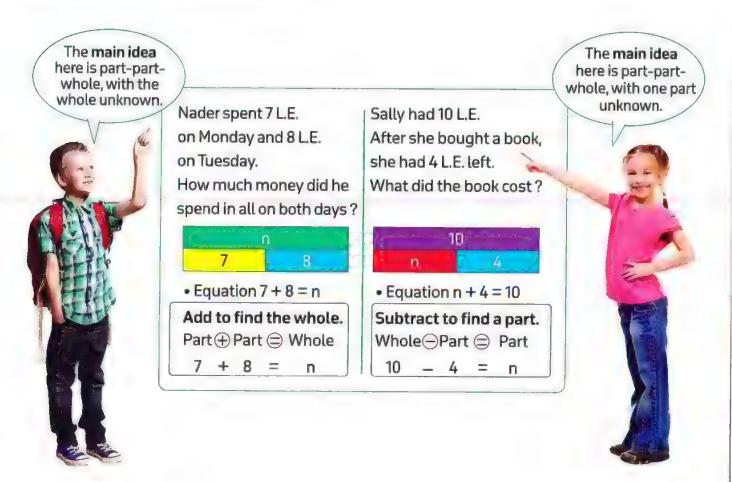


C = A - B

Subtract to find a part

#### Identifying the Main Idea

**Identifying the main idea** when you read in math can help you use the **problem-solving** strategy, and write a number sentence.



#### Notes for parents:

• If your child has trouble writing number sentences for problems, tell him/her to figure out the main idea in the problem, draw a picture for it, and then decide which operation it calls for.

## Example 1

There are 5,526 bees in a hive.

In this hive 3,491 are males and the rest are females.

How many females in this hive?

## Solution [V

• The whole is: 5,526

- One part is: 3,491 [males]
- The second part is unknown : x [females]
- · Bar model:

5,526	
3,491	×

- Equation: 3,491 + X = 5,526
- Solution : X = 5,526 3,491 = 2,035 females.

#### How to write a number sentence (or equation)

- Step 1 Show the main idea.
- Step 2 Decide which operation fits the main idea.
- Step 3 Use a letter to show what you are trying to find.
- Step 4 Solve the number sentence.

#### Note

You can write many equations for this problem

$$3,491 + X = 5,526$$

$$X + 3,491 = 5,526$$

$$5,526 - 3,491 = X$$

$$5,526 - X = 3,491$$

The value of x is the same.



#### your understanding

If the number of visitors of the Pyramids in one month is 183,523 and the number of foreign visitors is 38,191

or

, find the number of Egyptian visitors.

Bar model

Equation:

Solution:



<sup>·</sup> If your child writes only the answer, ask him/her to reread the directions, and write a number sentence that is including a letter stands for the unknown.

#### Learn 2 Solving equations with variables

- An equation is a number sentence stating that two amounts are equal.
- A variable is a letter in the equation that you should find its value.
- Solving an equation means finding the value of the variable that makes the values of its two sides equal.

## Example 2

Solve the equation by using a bar model: 14 - d = 8

Solution [V]



	14		
· Bar model :	d	8	

• Solution: d = 14 - 8 = 6

Subtract to find a part. Whole - Part = Part

## Example 3

Solve the equation by using a bar model: y = 34,500 = 55,200

Solution [V



Bar model :

1	1
34,500	55,200

• **Solution**: y = 34,500 + 55,200 = 89,700

Add to find the whole. Part + Part = Whole



Solve the equation by using a bar model: 74,562 + m = 125,708

#### Solution [V]





125,	708
74,562	m

• Solution: m = 125,708 - 74,562 = 51,146



your understanding

Solve the following equations by using the bar model.

**a.** 
$$X + 54,600 = 87,623$$

c. 
$$p - 4,252 = 31,726$$

**d.** 
$$13,725 + n = 70,000$$

#### Notes for parents:

Ask your child to check his/her answer using fact family.

#### Exercise

on lesson 4

## Sion Miordale, Mortiololiae orno Saury Probliams

REMEMBER

46	10.0	110	271	30	TA	441	h
			13	3	10	ΝI	
	0.1		-	120	.,,		μ





III From the school book

1. Find the value of each variable in the following part-part whole tables.

	X
34,750	19,051

78	8,514
а	29,125

121,72	
10,714	У

41,021	52,321
	<del></del>

2. Solving equations with variables. Create a bar model to solve each of the following problems.

**a.**  $\triangle$  14,000 – n = 6,000

Bar model:

Solution:

**b.** m = 35,462 = 2,741 [Ismailia 23]

Bar model:

Solution:

**c.**  $\triangle b - 53,500 = 75,200$ 

Bar model:

Solution : -

d. 4,641 + y = 7,548 (El-Monofia 24)

Bar model:

Solution :-

**e.** 44 725,625 + c = 935,075

Bar model:

Solution: -

f. 413,280 - d = 5,420

Bar model: -

Solution :

**g.** 5,000 + a = 7,000

(Cairo 24)

Bar model:

Solution: -

**h.** 44 f + 205,925 = 810,775

Bar model:

Solution: -

3. Complete.

a. By using the bar model, the value of m = -

7,938 3,153

(Ismailia 24)

**b.** In the opposite bar model, the value of the unknown x =

6,2	232
2,232	X

(Alex. 24)

c. In the opposite bar model,
the value of the unknown C = \_\_\_\_\_

7,620	
С	4,310

[Giza - Awseem 23]

d. In the opposite bar model,
the value of k = \_\_\_\_\_

4,152	
k	1,045

[Alex. - Al Agamy 23]

**e.** In the equation 125 + A = 300, then A = \_\_\_\_\_

(Souhag 22)

f. The value of the variable in the equation : b - 1,250 = 3,000 is

[El-Monofia 24] (El-Beheira 24]

**g.** If 5,000 - M = 3,000, then the value of M = -

[El-Menia 24]

**h.** If K = 490 = 4,010, then K = \_\_\_\_\_

[Cairo 24]

i. If A + 710 = 920, then the value of A = -

[El-Menia 24] [El-Monofia 24]

j. If 835 – A = 751, then the value of A = \_\_\_\_\_

(El-Fayoum 22)

**k.** 4,625,269 — = 1,000,000

[Port Said 22]

## Story Problems

- 4. By using a bar model, write the equation, then find the solution.
  - a. The number of boys and girls in a school is 2,340, the number of boys in this school is 1,234

    What is the number of girls in this school?

    Bar model

Equation: -

Solution:

b. There are 12,000 species of ants. Of these 12,000 species ,2,500 species live in Africa and the rest live in other parts of the world. How many species do not live in Africa?

Bar model

Equation:

Solution:

There are 5,328 ants in the colony. In the colony, 2,164 ants are females and the rest are males.
How many male ants are in the colony?

Equation:

Solution:

[Aswan - Noba 23]

700 ants are taking out the colony's trash. How many ants are foraging for food and supplies?

Bar model

Equation:

# Challenge

5. Solve the equation by using a bar model.

l+l=8

Solution: -

Solution:



# Multiple Choice Questions

#### Choose the correct answer.

 From the opposite bar model, the value of unknown m = -

600 350 m

- A. 100
- **B**. 150
- C. 200
- D. 250
- [Cairo 24]

[Aswan 23]

2. In the opposite bar model, the value

of x = ----

54,900 50,000 X

- A. 9,000
- B. 4,900
- **C.** 40,000
- D. 49

[Alex. 24]

3. In the equation: b = 4,358 = 3,422,

the value of b = ----(Souhag 23)

- **A.** 7,780 **C.** 5,662
- **B.** 6,653
- **D.** 5,556

4. If 614 - x = 600, then x =

[Cairo 23]

- A. 11
- C. 16
- B. 12 D. 14

5. The value of x in the equation:

725,625 + x = 935,075is -

6. If 111 + x = 481, then the value of x = -

[Kafr EL-Sheikh 24]

- **A.** 292,450
- **B.** 290,450
- C. 209,540
- **D**. 209,450

- A. 260
- **B.** 370
- C. 471
- **D.** 592

7. If 834 - X = 622, then X = 622

[Kafr El-Sheikh 24]

- **A.** 300
- B. 212
- C. 412
- **D**. 612

8. If 23,080 - B = 21,980, then B =

[Alex. 24]

- A. 2,900
- **B.** 2,000
- C. 2,980
- **D**. 1,100

9. If 45,300 - A = 42,700, then A = 42,700

[Alex. 24]

- A. 3,400
- **B.** 3,800
- **C.** 2,600
- **D.** 2,400

10. The value of the variable in the equation:

b + 1,000 = 4,000 is

- **A.** 1,000
- **B.** 2,000
- **C.** 3,000
- **D**. 3

## Solving Multistep Story Problems with Addition and Subtraction



#### Learn

Some story problems have a hidden question.

To solve the problem, you must first find and answer the hidden question.

#### Example

Amgd is reading a book. He reads 96 pages in the first week and 129 pages in the second week. The book has 290 pages.

How many pages are left to read?

#### Solution [V

Hidden question:

How many pages did Amgd read in the two weeks? Amgd read = 96 + 129 = 225 pages

 Use the new information to solve the problem and find the left pages. The left pages = 290 - 225 = 65 pages

#### **Another Way**

Hidden guestion:

How many pages are left in the first week?

$$290 - 96 = 194$$
 pages

Final answer:

How many pages are left to read? 194 - 129 = 65 pages

#### Third Way

Bar model

290	
96 + 129	n

Equation:

$$96 + 129 + n = 290$$
  
 $225 + n = 290$ 

Answer:

n = 290 - 225 = 65 pages



VI later 1

your understanding

A library sold 25,325 books in the first week, 19,712 books in the second week and 28,119 in the third week. If the library had 473,590 book. How many books are left?

#### Notes for parents:

 Give your child a multistep story problem and ask your child to use the solving steps to help solving the problem.



## Solving Muliforian Steery Promiums with Monthion and Subtraction

ROBLEM SOLVING

ER • UNDERSTAND	O APPEY	ROBLEM SOLVING	From the school book
ver the following	problem	5.	
ohamed bought	a laptop fo	r 6,250 L.E. and a mobile fo	r 3,750 L.E., if he had 16,000 L.E.
now much money	are left w	ith him?	[El Monofia 24]
			rst week and 346 pages in second
reek. How many p	pages are	left?	[El-Monofia 24]
			• •
			How many more stamps did Sara
e third month. Th	ne expect i	number of sold toys is 25,0	000 toys by the end of the fourth
The ant colony			
a colony of 27,385	ants and	·	•
975 visitors in Ma	rch. They	expect to have 150,000 vi	sitors by the end of April.
	book contains 90 ara, Bassem and bllected 198 stamplect than Bassem and bllect than Bassem	cohamed bought a laptop for now much money are left who book contains 900 pages. It was a laptop for eek. How many pages are sollected 198 stamps and Mina are collected 198 stamps and Mina ethird month. The expect ronth. How many toys are not have a colony of 27,385 ants and ore ants can join?  The Great Pyramid had 59,975 visitors in March. They	the following problems.  Inhamed bought a laptop for 6,250 L.E. and a mobile for now much money are left with him?  book contains 900 pages. If you read 423 pages in file reek. How many pages are left?  ara, Bassem and Mina are collecting stamps. Sara collected 198 stamps and Mina collected 357 stamps. Is allected than Bassem and Mina have combined?  factory sold 6,580 toys in the first month, 7,214 toys in the third month. The expect number of sold toys is 25,4 onth. How many toys are needed to be sold in the form. The ant colony website hopes that a new colony A a colony of 27,385 ants and a colony of 52,890 ants joint and a colony of 52,890

		6
g.	New Valley has a population of 256,088. If Matrouh has a	population of 429,999 and
	South Sinai has a population of 108,951, how many more peo	ple do Matrouh and South
	Sinai have combined than New Valley?	[Aswan 23]
h.	Mariam saw on the website that several smaller Pharaoh	ant colonies were joining

h. An Mariam saw on the website that several smaller Pharaoh ant colonies were joining together to form a larger colony. On Monday, 1,725 ants joined together with 22,750 ants. Then, another 6,075 ants joined. How many ants were in the larger colony on Monday? Omar checked the website on Friday and learned that there were now 50,750 ants in the colony. How many ants had joined the colony since Monday?

i. Ahmed had a pie with 340 calories for breakfast. Then, Ahmed had a glass of milk, an apple, and a chicken sandwich for lunch. The milk had 190 calories, the apple had 85 calories, and the chicken sandwich had 255 calories. If the average adult can eat 2,000 calories per day, how many more calories can Ahmed eat today?

# Challenge

2. The opposite table represents the number of shirts in stock of a store.

Answer the following problems.

a. How many more red shirts than green shirts?

	Green	Red
Small	15,436	18,421
Medium	33,142	43,218
Large	5,347	14,132

b.	How many more small shirts than large shirts?

## **Unit Two Assessment**



#### 1. Choose the correct answer.

1. 38 + 76 = 76 + 38 proporty.

(Souhag 24)

- A. associative
- B. commutative
- C. additive identity
- D. distributive

**2.** 5,588 + 0 = 5,588 is using — proporty.

[Alex. - Agamy 24]

- A. additive identity B. commutative
- C. distributive
- D. associative

- 3. [112 + 38] + 77 = 112 + [ ---- + 77]
  - **A.** 38

- C. 115
- **D.** 150

4. In the corresponding bar model:

The value of the unknown C =

[El-Monofia 24]

- A. 700
- **B.** 300
- **C.** 520
- D. 800

500 C 200

5. If Y + 300 = 321, then Y = ---

[Cairo 24]

- **A**. 321
- **B.** 300
- C. 31

**D**. 21

**6.** If x = 180 = 256, then x = ---

[El-Monofia - Quesna 23]

A. 76

- B. 436
- C. 176
- D. 406
- 7. Joudy found that 38,828 + 52,309 = 91,137. Which estimate could she use to check if her answer is reasonable?
  - **A.** 30,000 + 50,000 = 80,000
- **B.** 30,000 + 60,000 = 90,000
- **C.** 40,000 + 50,000 = 90,000
- **D.** 40,000 + 60,000 = 100,000

#### Complete the following :

**1.** 91,024 + 32,549 = \_\_\_\_

(Cairo - Heliopolis 23)

2. The additive identity is - —

[El-Beheira - Hosh Essa 23]

- 3. Two ants colonies have 33,585 ants. If colony A has 17,990 ants, then the number of ants in colony B = \_\_\_\_ ants.
- 4.  $15+5+7=[15+\dots]+7=15+[5+\dots]$
- 5. In the bar model

1,000		
Α	325	

, the value of A equals —

[Luxor 24]

- 6. If n = 34 = 29, then n = -
- **7.** 7,000 350 = \_\_\_\_
- **8.** A local bakery sold 7,120 zalabya in one day. If they sold 1,269 zalabya in the morning and 2,658 zalabya in the afternoon, then the number of zalabya sold during the rest of the day is ———— zalabya.

#### 3. Choose the correct answer:

1. 13 + 7 = 7 + 13, represents — property.

[El-Monofia - Sadat City 23]

- A. commutative
- B. associative
- C. additive identity
- 2. In the opposite bar model, the value of w = -

[Aswan - Noba 23]

- A. 2,957
- B. 9,449
- C. 3,043
- **D.** 3,000

6,203 3,246

**3.** 613 – 247 = —

(Cairo - Math's Inspection 23)

- A. 567
- **B.** 343
- **C**. 366
- **D.** 807

4. The additive identity of addition is ———

(Giza 23)

**A.** 0

B. 1

**C**. 10

D. 2

- **5.** 112 + 369 = 369 + \_\_\_\_\_
  - A. zero
- **B.** 369
- C. 112
- **D**. 481
- **6.** Rana had 251,750 pounds, she bought a mobile for 5,555 pounds and a car for 125,780 pounds, then the left money with Rana is \_\_\_\_\_\_ pounds.
  - A. 131,335
- **B.** 120,415
- **C.** 125,970
- **D.** 246,195

- **7.** 3,508 + 3,692 = ----
  - A. 61,190
- B. 184
- C. 7,190
- **D.** 7,200

#### 4. Answer the following.

1. Find a. 3 2 1 8

**b.** 734 – 245 = ——

+4 5 5 9 3 [Cairo 24]

- 2. Nader made 18 pieces of falafel. He ate 6 pieces and his brother ate 5 pieces. Represent these data using bar model to show how many pieces are left?
- 3. Mohamed bought a laptop for 7,250 L.E. and a mobile for 4,750 L.E. If he had 15,000 L.E., how much money are left with him?

[El-Beheira 24]

4. A bridge of ants consists of 692 ants and another bridge consists of 165 ants, how many ants are there in two bridges? [Beni Suef 24] [Port Said 24] [Cairo - Math's Inspection 23]

## THEME ONE

**Number Sense and Operations** 



## **Concepts of Measurement**

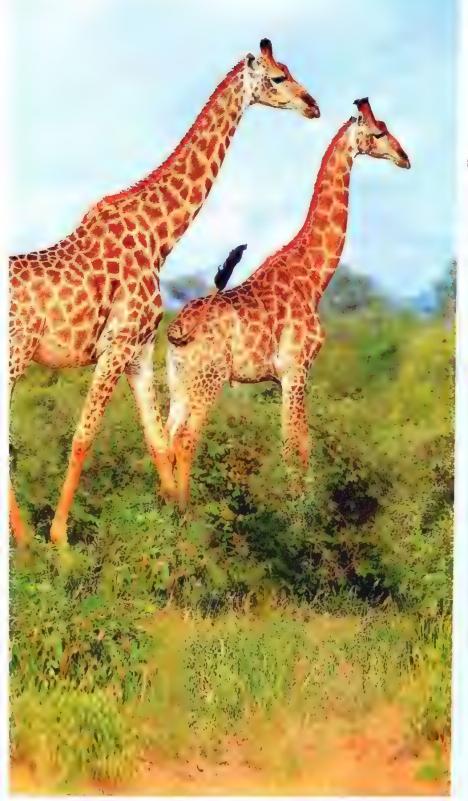
► Concept 1 :
Metric Measurement

► Concept 2 : Measuring Time



# CONCEPT

# **Metric Measurement**



#### ▶ Lesson 1

Measuring Length

#### **Learning Objectives:**

- Students will explain the relationship between metric units of length.
- Students will convert between metric units of length.

#### ▶ Lesson 2

Measuring Mass

#### **Learning Objectives:**

- Students will explain the relationship between metric units of mass.
- Students will convert between metric units of mass.

#### Lesson 3

Units of Capacity

#### Learning Objectives:

- Students will explain the relationship between metric units of capacity.
- Students will convert between metric units of capacity.

#### Fast Fact

- ▶ Giraffes' long necks allow them to reach the leaves on treetops. A giraffe is the tallest land mammal. Some giraffes can be as tall as 6 meters!
- ▶ The elephant is the largest land mammal. Elephants can weigh as much as [7,250 kilograms]. They drink 110 to 180 liters of water a day!

A baby elephant is called a calf.

1

## **Measuring Length**

#### Learn

Meter, decimeter, centimeter and millimeter are four units of measuring lengths.



A corn kernel is about 10 millimeters long.



An ear of corn is about 20 centimeters long or 2 decimeters long.



A young corn plant is about 1 meter tall.

#### Relating Units of Length

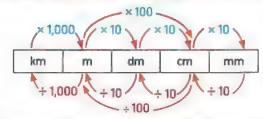
#### Table of Measures

1 kilometer = 1,000 meters
1 meter = 100 centimeters
1 meter = 10 decimeters
1 decimeter = 10 centimeters
1 centimeter = 10 millimeters

	Name	Abbreviation
	Kilometer	km
nits	Meter	m
gh u	Decimeter	dm
Lengh units	Centimeter	cm
	Millimeter	mm

#### **Converting Metric Length Units**

- When you change larger units to smaller units multiply.
- When you change smaller units to larger units divide.



#### Example 1

#### Fill in blanks.

#### Notes for parents:

 Let your child understand that when converting from larger length unit to smaller length unit he/she can multiply by 10, 100, 1,000, ...



## Solution 🕎

- a. 8 m = 800 cm
- $c. 130 \, \text{mm} = 13 \, \text{cm}$
- **e.** 5 km = 5,000 m $=500,000 \, \mathrm{cm}$

- **b.**  $700 \, \text{cm} = 7 \, \text{m}$
- **d.** 15,000 m = 15 km
- f. 8 km = 8,000 m $= 80,000 \, dm$



## Example 2

#### Complete each of the following.

- a. 7 m, 56 cm = ---- cm
- c. 12 km, 12 m = ---

- **b.** 9 cm, 5 mm = -
- **d.** 4 m, 16 dm = -

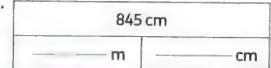
### Solution [7]

- a. 7 m, 56 cm = 700 cm + 56 cm = 756 cm
- c. 12 km, 12 m = 12,000 m + 12 m = 12,012 m
- **b.** 9 cm, 5 mm = 90 mm + 5 mm = 95 mm
- d. 4 m, 16 dm = 40 dm + 16 dm = 56 dm

## Example

#### Convert the lengths into the units on the bar models.

a.



29,60	03 m
km	m

## Solution 🕎





[Think: 845 = 800 + 45]



[Think : 29,603 = 29,000 + 603]

#### your understanding

#### Complete each of the following.

- a. 600 mm = \_\_\_\_\_ cm
- **b.** 600 cm = ----
- **c.**  $500 \, dm = -$
- **d.** 3 km + 300 m = -m
- **e.** 563 cm = -

<sup>·</sup> Let your child explain the relationships between the metric length units "km, m, dm, cm, mm".

# Exercise

	Measuring Le	ngth	
on lesson 1	The second control of the second		
• REMEMBER • UNDERSTAN	PROBLEM	SOLVING	From the school book
1. () Circle the best	unit to measure each le	ength.	
<ol> <li>Height of a stude Kilometer</li> </ol>		Centimeter	Millimeter
2. Distance betwee Kilometer	en home and school Meter	Centimeter	Millimeter
3. Length of the Nil Kilometer		Centimeter	Millimeter
4. Length of an ant	:	Centimeter	Millimeter
5. Distance from Ca Kilometer	airo to Alexandria	Centimeter	Millimeter
2. Complete.			
a. <u>1</u> 1km =	m	<b>b.</b> 12 km = — m	(Port Said 24)
<b>c.</b> 16 cm =	— mm		[Cairo – El-Nozha 23]
<b>d.</b> 12 dm =	cm [Giza 23]	e. 11m=	m
f. 5 m =	cm [Giza – Haram 22]	g. 7 m = cm	(Cairo 23)
h. — kilon	neters = 40,000 meters	5	[Aswan 23]
i. 7,000 meters = -	kilometers		[Souhag 23]
j. 9,000 mm =	— - cm	[Alex. – El-Montazah 23]	[Alex Borg El-Arab 22]
<b>k.</b> 70 cm =	dm		(Cairo – El-Nozha 23)
1. $5 cm + 3 mm = -$	mm		[El-Menia 24]
m. 8 meters, 45 cm	n =cm		(Port Said 24) (Cairo 24)

i. 7,000 meters = kilometers	(Souhag 23)
i. 7,000 meters – Kitometers	(Souriag 25)
j. 9,000 mm = cm	[Alex. – El-Montazah 23] [Alex. – Borg El-Arab 22]
<b>k.</b> 70 cm = ——— dm	(Cairo – El-Nozha 23)
L. 5 cm + 3 mm = mm	[El-Menia 24]
<b>m.</b> 8 meters, 45 cm = cm	(Port Said 24) (Cairo 24)
<b>n.</b> 3 m, 48 cm = cm	(Port Said 24)
<b>o.</b> 3,924 meters = ——— kilometers , 924	meters [Cairo 24]
<b>p.</b> 9,250 meters =	- m [Alex. 23]
<b>q.</b> $27  \text{km}$ , $55  \text{m} = \frac{\text{m}}{\text{m}}$	(El-Dakahlia 22)
r. 423 cm = cm	(Alex. – Al-Agamy 23)
s. 897 mm = cm, mm	(Ismailia 23)
t. $5 \text{ km} - 3,000 \text{ m} = \text{ m}$	[Giza 23]

	230 cm		<b>b.</b>	478	cm	C.	85	cm
	— m	—-cm		— m	— cm		dm	cm
d.			[Cairo 23] <b>e.</b> [			f. [		
	21	· m			- cm	-		– mm
	3 km	40 m		5 m	91 cm	Ĺ	7 cm	5 mm
	r each of t							
a. List	the followi	ng length	s in an ascending 8 m , 8,000 c		9 mm		(Cairo – H	leliopolis 2:
			0111,0,000 0	an,okm,	o mm			
			minute, what is t	he distan	ce the trair	COVE	ers in 7 mir	nutes
in kil	lometers a	nd in mete	ers?					
-								
c · · · W	/han scient	ricte etudio	ed the anthill the	, for and the	at it was 0			
			ed the anthill, they			mete	rs deep.	
			ed the anthill, they s would that be?!			mete	rs deep.	
						mete	rs deep.	
1. He	ow many c	entimeter	s would that be?	Show you	r work.			had to
1. He	ow many c	entimeter ad to mov	s would that be?! e tons of soil to co	Show you	r work. neir nest. Tl	ne wo	orker ants	
<ol> <li>He</li> <li>Th</li> <li>ca</li> </ol>	ne colony h	entimeter ad to mov f soil 1 kilo	s would that be?	Show you onstruct th	r work. neir nest. Tl ant carried	ne wo	orker ants	ina
<ol> <li>He</li> <li>Th</li> <li>ca</li> </ol>	ne colony h	ad to mov f soil 1 kilo nany kilom	s would that be?! e tons of soil to co meter to the surfa	Show you onstruct th	r work. neir nest. Tl ant carried	ne wo	orker ants	ina
1. Ho	ne colony h rry loads o eek, How m	ad to mov f soil 1 kilo nany kilom neters ?	s would that be?! e tons of soil to co meter to the surfa	show you onstruct th ace. If one while mo	r work. neir nest. Ti ant carried ving soil ? I	ne wo	orker ants ads of soil many met	in a ers ? Hov
1. He 2. Th ca we	ne colony h rry loads o eek, How m	ad to mov f soil 1 kilo nany kilom neters ?	e tons of soil to co meter to the surfa eters did it travel	onstruct thace. If one while mo	r work.  neir nest. Ti ant carried  ving soil ? i	ne wo	orker ants ads of soil many met	in a ers ? Hov —— cm
1. He  2. Th  ca  we  ma	ne colony h rry loads o eek, How m any centim	ad to mov f soil 1 kilo nany kilom neters ?	e tons of soil to co meter to the surfa eters did it travel — km ——— up to 3 centimete	onstruct the ce. If one while mo	r work.  neir nest. Ti ant carried ving soil ? i  m — mature col	ne wo	orker ants ads of soil many met	in a ers ? Hov ——cm
<ol> <li>He</li> <li>The</li> <li>Ca</li> <li>We</li> <li>Ca</li> <li>100,0</li> </ol>	ne colony h rry loads o eek, How m any centim arpenter ar	entimeter ad to mov f soil 1 kilo nany kilom neters? nts can be the ants lin	e tons of soil to co meter to the surfa eters did it travel	onstruct the ce. If one while mo	r work.  neir nest. Ti ant carried ving soil ? i  m — mature col	ne wo	orker ants ads of soil many met	in a ers ? How ——cm
<ol> <li>He</li> <li>The</li> <li>Ca</li> <li>We</li> <li>Ca</li> <li>100,0</li> </ol>	ne colony h rry loads o eek, How m any centim arpenter ar	entimeter ad to mov f soil 1 kilo nany kilom neters? nts can be the ants lin	e tons of soil to co meter to the surfa eters did it travel — km —up to 3 centimete ned up end to end	onstruct the ce. If one while mo	r work.  neir nest. Ti ant carried ving soil ? i  m — mature col	ne wo	orker ants ads of soil many met	in a ers ? Hov —— cm
1. He 2. Th ca we ma d. : Ca 100,0 How	ne colony h rry loads o eek, How m any centim arpenter ar 100 ants. If many met	entimeter ad to mov f soil 1 kilo nany kilom neters? nts can be the ants liners long w	e tons of soil to cometer to the surfaceters did it travel  km  up to 3 centimeters and up end to end to only a line of 100,	onstruct the ce. If one while mo	r work.  neir nest. Ti ant carried ving soil ? i  m — mature col	ne wo	orker ants ads of soil many met	in a ers ? Hov ——cm
1. He 2. Th ca we ma d Ca 100,0 How	ne colony herry loads of eek, How many centime arpenter are 100 ants. If many met	entimeter ad to mov f soil 1 kilo nany kilom neters? hts can be the ants lin ers long w	e tons of soil to co meter to the surfa eters did it travel — km —up to 3 centimete ned up end to end	show you onstruct the oce. If one while mo rs long. A I and each 000 ants I	r work.  neir nest. The stant carried ving soil? In the stand of the standard color and is 1 ceres of the standard color a	ne wo	orker ants ads of soil many met	in a ers ? Hov ——cm

# Multiple Choice Questions

#### Choose the correct answer.

1.	The best unit to measure	e the	length of	2.	41	km =	m		
<b>(3)</b>	an ant is		[Alex. 24]				(El-Moi	nofi	a - Sadat City 23
	A. meter	B.	liter		A.	40		В.	400
	C. mm	D.	km		C.	4,000		D.	4
3.	10 meters =	enti	meters (Cairo 23)	4.	5,0	000 mm =	m		
	A. 10	B.	100		A.	5		В.	50
	<b>C.</b> 1,000	D.	1		C.	500		D.	50,000
5.	62 dm = cm		[Alex. 24]	6.	3,0	000 cm =	m		[Ismailia 24]
0	A. 62	B.	620		A.	100		В.	30
	<b>C.</b> 6,200	D.	62,000		C.	3		D.	300
-	423 cm =			8.	4	m , 16 dm = -		- d	m
()	(Giza – Awssem 23) (El-M	onofi	a – Quesna 22)						
	A. 23 m , 4 cm	B.	42 m , 3 cm		A.	416		B.	4,160
	C. 4 m , 23 cm	D.	3 m , 42 cm		C.	56		D.	4,016
	3 km + 300 m =	— m	(Souhag 24)		5 k	m, 5m=—	r	n	(Giza 23)
<b>(3)</b>	<b>A.</b> 3,300	B.	30,300	9	A.	55		В.	5,050
	<b>C</b> . 300,003	D.	303		C.	5,005		D.	5,500
11.	6 m , 50 cm =	— cn	n				(Giza –	Ab	o El-Nomros 23)
	A. 605	B.	650		C	. 560		D	. 6,500

12. Which sentence best explains the relationship between a meter and a kilometer?

(Alexandria - West 22)

- **A.** A kilometer is equal to 100 meters.
- B. A kilometer is equal to 1,000 meters.
- C. A meter is equal to 1,000 kilometers.
- D. A meter is equal to 100 kilometers.
- Using the relationship between units of length, choose the correct answer to completethe following table: [Cairo Heliopolis 22]

kilometer	meter	centimeter
60	60,000	?

- **A.** 600
- B. 6,000

- C. 60,000
- **D.** 6,000,000

2

## **Measuring Mass**

## Learn

Matter is what all objects are made of. Mass is the amount of matter in an object. Metric units of mass are the gram [g], the kilogram [kg] and the ton.



The mass of a small paperclip is about 1 g

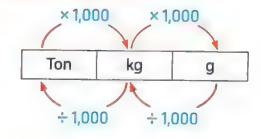


The mass of a baseball bat is about 1 kg



The mass of a car is about 1 ton

## **Converting Metric Mass Units**



1 Ton = 1,000 kilogram

1 kilogram = 1,000 grams

1 Ton = 1,000,000 grams

#### Note

Mass and weight are different.



- Mass stays the same no matter where you are.
- Weight changes from a place to another, for example the weight of any object on the Earth is different from its weight on the moon.

#### Notes for parents:

 $\bullet$  Ask your child to find something at home of mass 20 g , and another something of mass 1 kg.

## Example 1

#### Complete each of the following.

**e.** 
$$18 \text{ kg}$$
,  $81 \text{ g} = -----$ 

#### **b.** 32,000 grams = kilograms

**d.** 
$$4 \text{ kg}$$
,  $63 \text{ g} =$ 

**f.** 
$$3 \text{ tons}$$
,  $315 \text{ kg} =$  kg

### Solution [V]



**a.** 
$$9 \text{ kilograms} = 9,000 \text{ grams}$$

c. 
$$7 \text{ tons} = 7,000 \text{ kilograms}$$
.

**e.** 
$$18 \text{ kg}$$
,  $81 \text{ g} = 18,000 \text{ g} + 81 \text{ g} = 18,081 \text{ g}$ 

**g.** 
$$8 \text{ kg}$$
,  $115 \text{ g} = 8,115 \text{ g}$ 

**b.** 
$$32,000 \text{ grams} = 32 \text{ kilograms}$$

**d.** 
$$4 \text{ kg}$$
,  $63 \text{ g} = 4,000 \text{ g} + 63 \text{ g} = 4,063 \text{ g}$ 

f. 
$$3 \text{ tons}$$
,  $315 \text{ kg} = 3,000 \text{ kg} + 315 \text{ kg} = 3,315 \text{ kg}$ 

## Example 2

#### Convert the masses into the units on the bar models.

a.

•	1,560 g	
	kg	g

C

	5,555 kg	
_	tons	_ kg

b.

d

	kg
2 tons	2 kg

#### Solution 🕎



1,560 g	
1 kg	560 g

[Think: 1,560 = 1,000 + 560]

Ç.

5,555	kg
5 tons	555 kg

[Think: 5,555 = 5,000 + 555]

b.

27,027 g	
27 kg	27 a

[Think: 27,027 = 27,000 + 27]

d.

•	2,002	2 kg
	2 tons	2 kg

[Think : 2,002 = 2,000 + 2]

#### Notes for parents:

• Ask your child to explain the relation between the metric mass ton and kg.

## Example 3

An oat bag of mass 250 g, Dalia bought 6 bags, what is the total mass of bags in kilograms and grams?

#### Solution [V]



The total mass = [250 + 250] + [250 + 250] + [250 + 250]= (500 + 500) + 500= (1,000) + 500 = 1 kg,500 g



### your understanding

Complete each of the following.

1kg

**c.** 
$$5,000 g =$$
 kg

f. 
$$9 \text{ kg}$$
,  $314 \text{ g} = ----\text{g}$ 

**h.** 
$$8,436 \text{ kg} = ----\text{kg}$$

Let your child explain the relationship between the metric mass units "kg, g".

### Exercise

#### on lesson 2

## **Measuring Mass**

• UNDERSTAND

PROBLEM SOLVING

From the school book

#### 1. Complete. Tell whether you multiply or divide.

[Cairo 23]

(ismaillia 23)

(Giza 24) [El-Menia 23]

f. — tons = 19,000 kg

[El-Menia 24]

**g.** 
$$\square$$
 kg = 5,000 g

h. 
$$\square$$
 kg = 30,000 g

i. 5 kg and 321 g = ----g

(Souhag 23)

**j.** 6 kg, 454 g = -----g

[Cairo 24]

**k.**  $6,450 \text{ kg} = \frac{1}{2} \text{ kg}$ 

(Cairo 23)

**m.** 
$$35 \, \text{kg}$$
,  $86 \, \text{g} = ----- \text{g}$ 

[Cairo 24] [Cairo - Al-Khalifa and Mokattam 23] [El-Kalyoubia 22]

g

**o.** 
$$14,085 g = ------- kg, 85 g$$

[Alex. 24]

$$\mathbf{p.} \ 7.324 \, \mathrm{kg} = ---- \, \mathrm{kg}$$

## 2. Find each missing number.

a. [4]



c. 🕮

	- g
7 kg	414 g

b. 111

8,40	00 g
—— kg	g

d.

kg		
2 ton	30 kg	

<b>3.</b>	Compare. Write	(>, < or =).			
	<b>a.</b> 95 kg	950 g	<b>b.</b> 3 kg	0,08	00 g
	<b>c.</b> 400 g	400 kg	d. 2 ton	2,00	0 kg
	<b>e</b> . 6kg,6g	660 g	f. 2 kg,530 g	24,0	00 g
i i	What is the orde	er of the following masses			
		lack ants is estimated to w			
	A different an Rewrite that wei	t colony is estimated to w ght in grams.	eigh 14 kilograms ar	nd 89 grams.	
			reigh 14 kilograms ar		orts Rails
	Rewrite that wei	ght in grams. der of the sports balls fro		Mass of Sp	orts Balls
	Rewrite that wei  Use the picture.  a. What is the or	ght in grams. der of the sports balls fro			orts Balls  Bowling ball 6 kilograms
	Rewrite that wei  Use the picture.  a. What is the or	ght in grams. der of the sports balls fro		Mass of Sp Basketball	Bowling ball
	Use the picture.  a. What is the or mass to least	ght in grams. der of the sports balls fro	m greatest	Mass of Sp  Basketball 616 grams  Table tennis ball	Bowling ball 6 kilograms Tennis ball
. (	Use the picture.  a. What is the or mass to least  b. A baseball has	der of the sports balls frommass?	m greatest ns.	Mass of Sp  Basketball 616 grams  Table tennis ball	Bowling ball 6 kilograms Tennis ball

# Multiple Choice Questions

#### Choose the correct answer.

1.	is a me	asuring unit of I	mass.	2.	2 kg = gr	n (Alex El-Montaza 23)
(O)		(Giza 23) (El-	Menia 24]	•		
	A.km	B. Liter			<b>A</b> . 20,000	<b>B.</b> 2,000
	C. Hour D. kg				<b>C.</b> 200	<b>D.</b> 20
3.	10 kilograms = –	grams		4.	m	
()		(Cairo – El-	Nozha 23)			(Cairo - El-Nozha 23)
	<b>A.</b> 10	<b>B.</b> 100			<b>A</b> . 150	<b>B</b> . 1,500
	<b>C</b> . 1,000	<b>D.</b> 10,000			<b>C</b> . 15,000	<b>D.</b> 15
5.	5 tons = -	– kg		6.	5,000 grams =	– kilograms
(				)		(Aswan 23) (Giza 24)
	A. 5	<b>B</b> . 50			<b>A</b> . 50	<b>B</b> . 500
	<b>C</b> . 500				<b>C</b> . 5	<b>D.</b> 1,000
7.	12,000 gm =	kg	[Alex. 24]	8.	12,000 kg =	tons
0	A.120	<b>B</b> . 1,200		,	A. 12	<b>B</b> . 120
	<b>C</b> . 12,000	<b>D</b> . 12			<b>C</b> .1,200	<b>D</b> . 12,000
9.	9 kg,600 g =		(Luxor 24)	10.	5 kg and 861 gm =	gm (Cairo 23)
0	A. 96	<b>B</b> . 906			<b>A</b> . 5,861	<b>B</b> . 58,160
	<b>C</b> . 9,600	<b>D</b> . 15			<b>C</b> . 5,000,861	<b>D.</b> 5,861,000
11.	5 kilograms, 904	grams =	grams	12.	8,600 g	86 kg
0			(Cairo 24)		A.>	
	<b>A</b> . 5,904	<b>B</b> . 5,094			B. <	
	C. 4,390	<b>D</b> . 3,490			<b>c</b> . =	

- **13.** Which of the following is the greatest mass?
  - **A**. 900 g
- **B.** 20,000 g
- **C**. 70 kg

**D.** 16 kg

## **Units of Capacity**

## Learn

Capacity is the amount of liquid a container can hold.

• A Milliliter (mL) and a liter (L) are metric units that measure capacity.

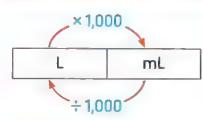


A milliliter is about 20 drops from an eyedropper.



The water bottle holds 1 liter (L) of water.

## **Converting Metric Capacity Units**



1 Liter = 1,000 milliliters

## Example 1

Find each missing number.

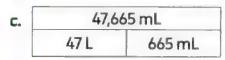
a. 8 Liters = — milliliters.

	47,66	5 mL
C.	L	mL

- - d. 13 L , 13 mL = \_\_\_\_mL

## Solution [V]

a. 8 Liters = 8,000 milliliters



- **b.** 56,000 mL = 56 L
- d. 13 L , 13 mL= 13,000 mL + 13 mL = 13,013 mL

#### Notes for parents:

Ask your child to bring 2 containers might hold about 1 liter at home.

## Example 2

#### Calculate.

- a. 4L+3,778 mL = \_\_\_\_\_L, \_\_\_\_ mL
- **b.** 2L,340 mL + 900 mL = \_\_\_\_\_L, \_\_\_\_mL
- c. 5L-2,570 mL = \_\_\_\_\_L, \_\_\_\_mL
- d. 24 L , 800 mL 19 L , 510 mL = \_\_\_\_\_ L , \_\_\_\_ mL



#### Solution [7]

- a. 3,778 mL = 3 L,778 mL 4 L + 3 L,778 mL = 7 L,778 mL
- b. 2L, 340 mL + 900 mL = 2L + [340 + 900] mL = 2L + 1,240 mL = 2L + [1,000 + 240] mL = 3L,240 mL
- c.  $5 L = 5 \times 1,000 = 5,000 \text{ mL}$  5,000 mL - 2,570 mL = [5,000 - 2,570] mL= 2,430 mL = [2,000 + 430] mL = 2 L,430 mL
- d. 24 L , 800 mL -19 L , 510 mL = 5 L , 290 mL

## Example 3

A truck consumed 1 L, 560 mL of gas in the first hour and 1 L, 840 mL in the second hour. Write the amount of gas consumed by the truck in liters and milliliters in the two hours.

#### Solution [V]



1L , 560 mL

+1L,840 mL

2L, 1,400 mL

=2L+1L,400 mL

= 3L ,400 mL

#### **Another Solution:**

1L,560 mL = 1,000 mL + 560 mL = 1,560 mL

1 L, 840 mL = 1,000 mL + 840 mL = 1,840 mL

The amount = 1,560 mL + 1,840 mL = 3,400 mL

 $=3L,400 \, mL$ 

#### Notes for parents:

• Let your child explain the relation between the metric capacity units " L , mL".

#### Enrich your knowledge

• Changing units in the metric system is like moving from one place-value position to another.

	/x.	10 ×	10 × 10 × 10			× 10 × 10	
	kilo – thousands	hecto- hundreds	deca- tens	base- ones	deci – 1 10	centi – 1 100	milli – 1 1,000
Units of length	Kilometer	Hectometer	Decameter	Meter	Decimeter	Centimeter	Millimeter
	km	hm	dam	m	dm	cm	mm
Units of mass	Kilogram	Hectogram	Decagram	Gram	Decigram	centigram	Milligram
	kg	hg	dag	g	dg	cg	mg
Units of capacity	Kiloliter	Hectoliter	Decaliter	Liter	Deciliter	centiliter	Milliliter
	kl.	hL	daL	L	dL	cL	mL
	1	10	10/	10	: 10	110	. 10

## your understanding

#### 1. Complete each of the following.

#### 2. Complete.



#### **Exercise**

## **Units of Capacity**

on lesson 3

REMEMBER





🏂 HER LESS AND 💮 💸 PROBLEM SOLVING

From the school book

#### 1. Complete.

a. The capacity of a juice can is 2 liters and 500 mL, then its capacity in milliliters

[El-Monofia 24]

[Aswan 23]

[Cairo 24]

[Giza 24]

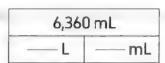
#### [Beni Suef 24] [Port Said 24]

$$k. 8 L,500 mL = ---- mL$$

$$q. -mL = 61 L, 254 mL$$

$$u. - mL = 7L,400 mL$$

#### 2. Find each missing number.



C. -

_	mL.
8 L	910 mL

[Alex. – El-Montaza 23]

d. mL 2L 250 mL

[El-Beheira - Hosh Essa 23]

#### 3. Fill in blanks.



[Giza 23]

[Cairo - El-Salam 23]

- f. 1L,500 mL+3L,200 mL= mL
- g. 23 L, 244 mL + 2 L, 50 mL = \_\_\_\_ mL
- h. 13 L,200 mL 3 L,100 mL = mL
- i.  $4L,540 \, \text{mL} 4L,95 \, \text{mL} = ---- \, \text{mL}$
- j. 4L,375 mL+5L,625 mL=\_\_\_\_\_L



- 4. List 6 L, 4,000 mL, 13,000 mL, 5 L from least to greatest.
- 5. Answer each of the following.
  - a. Mona drank 4 liters of water. How many milliliters did she drink?
  - **b.** (a) A car is filled with 45 liters of petrol. How many milliliters would that be?
  - c. A family drank 1 liter, 500 milliliters of orange juice at breakfast. If there were 3 liters of orange juice before breakfast, how much orange juice is left?
  - d. Doha's fish tank contains 5 liters, 245 milliliters of water. If the tank can hold 10 liters of water, how much more water does she need to fill the tank?
  - e. A car was filled with 20 liters, 500 milliliters of petrol. At the end of the day, there were 15 liters, 250 milliliters left in the tank. How much petrol was used?

# Multiple Choice Questions

#### Choose the correct answer.

1. The best unit to me	easure the capacity of	2. 3 liters =	milliliters (Giza 23	
a bottle of oil is —	[Alex. 24]	A.3	<b>B.</b> 30	
A. meter	B. liter	<b>C</b> . 300	<b>D.</b> 3,000	
C. mm	D. km			
3. 23 liters =	- milliliters	4. 13 L,30 mL=	mL	
	(Kafr El-Sheikh 24)	[Port Said 24] [Alex.	- Agamy 23] (El-Sharkia 22	
<b>A</b> . 23,000	<b>B.</b> 2,300	A. 43	<b>B.</b> 3,013	
<b>C.</b> 230	<b>D</b> . 32,000	<b>C</b> . 1,330	<b>D</b> . 13,030	
5. 5 liters , 500 mL = -	——— mL [Cairo 23]		mL [El-Monofia 24	
<b>A</b> . 5,500	<b>B.</b> 5,050	A. 16	<b>B</b> . 106	
<b>C</b> . 550	<b>D.</b> 15,050	C. 1,006	<b>D</b> . 10,006	
7. 2L+55 mL=	— mL [Alex. 24]	8. 6L+4,000 mL=		
A. 255	<b>B.</b> 2,550	A. 10	B. 46	
<b>C</b> . 2,055	<b>D.</b> 200,055	<b>C</b> . 64	<b>D.</b> 640	
9. 7L,900 mL = 4L,4	00 mL=L,	mL		
A. 3,400	B. 2,500	C. 2,400	<b>D.</b> 3,500	
10. 29,907 mL =	L,mL			
<b>A.</b> 29,97	<b>B.</b> 29,970	C. 2,907	<b>D</b> . 29,907	
1. Emy drunk 3 liters ,	then she drunk	milliliters.	(Cairo – El-Salam 23)	
<b>A.</b> 3	<b>B.</b> 30	<b>C</b> . 300	<b>D</b> . 3,000	
	ce can is 1 liter and 500 n	nL, then its capacity in n	nilliliters	
= mL	(I	(Giza – Abo El-Nomros 23) (El-Sharkia – Abo k		
<b>A.</b> 150	<b>B.</b> 1,500	<b>C</b> . 15,000	<b>D</b> . 1,005	

# CONCEPT 2

# **Measuring Time**



#### Lessons 4&5

Units of Time Elapsed Time

#### Learning Objectives:

- Students will tell time to the minute.
- Students will explain relationships between units of time.
- Students will explain elapsed time.
- Students will solve elapsed time problems.
- Students will explain the strategies they use to solve elapsed time problems.

#### Lesson 6

Applications of Measurement 1

#### Learning Objectives:

- Students will add and subtract to solve problems.
- Students will solve story problems involving measurement.
- Students will apply a variety of strategies to solve story problems.

#### ▶ Lesson 7

Applications of Measurement 2

#### **Learning Objectives:**

- Students will multiply and divide to solve problems.
- Students will solve story problems involving measurement.
- Students will apply a variety of strategies to solve story problems.

#### **Fast Fact**

The first pocket watch was invented in the 1500's by Peter Henlein. It only had an hour hand.
The minute hand was added in the late 1600's.

Lessons

- Units of Time
- Elapsed Time



110

### Learn 1

#### What time is it?

This morning, Amgad's family will take a ride on the railroad. The train leaves at 11 o'clock.

Amgad's family is in the station waiting room. The time right now is shown on the clock

Has Amgad's family missed the train? The time on the clock is 10:50 or 10 to 11. So, Amgad's family has not missed the train.



## Example 1

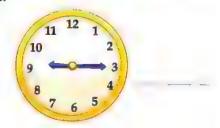
Write the time shown on the clock in two different ways.







d.



## Solution [V



- a. It is 2 o'clock 2:00
- c. It is 5 to 8 7:55
- b. It is half past 1
- 1:30
- d. It is quarter past 9
- 9:15

#### Notes for parents:

 Ask your child to count from 7:00 to 8:00 using 5-minutes intervals (7:00, 7:05, 7:10, and so on).

#### **Units of Measuring Time**

• Week, day, hour, minute, second, these units are used to measure time.

1 week = 7 days

1 day = 24 hours [hr]

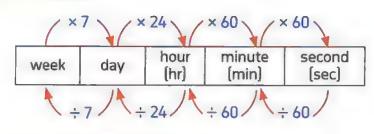
1 hour = 60 minutes [min]

1 minute = 60 seconds [sec]



#### **Converting Time Units**

#### First Using multiplication:





#### Second Using repeated addition (Pattern):

1 week = 7 days

1	day =	24 h	ours
---	-------	------	------

1	2	3	4		
7	14	21	28	***	3
	7	1 2 7 14	1 2 3 7 14 21	1 2 3 4 7 14 21 28	7 1/4 21 29



1 hour = 60 minutes

1 minute	= 60 seconds

Hour	1	2	3	4		>
Minute	60	120	180	240	***	× 60)
	(+,	+	60) (+	60		

Minute	1	2	3	4		>
Second	60	120	180	240	***	(× 60)
	+6	0 +6	+6	0		

### Example 2

#### Complete.

- **a.** 6 weeks = ——— days
- **c.** 5 days = ——— hours
- e. 9 minutes = seconds
- **b.** 13 weeks = ——— days
- **d.** 8 hours = minutes
- f. 75 minutes = -- hours, -- -- minutes

Ask your child how many hours there are in a week.

#### Solution [

- a. You can use multiplication: 6 weeks =  $6 \times 7 = 42$  days. or You can use repeated addition: 6 weeks = 7+7+7+7+7+7=42 days.
- **b.** 13 weeks =  $13 \times 7 = 7 \times [10 + 3]$  "Distributive property of multiplying"
  - $= [7 \times 10] + [7 \times 3] = 70 + 21 = 91$  days.
- c.  $5 \text{ days} = 5 \times 24 = 5 \times (20 + 4)$  "Distributive property of multiplying"
  - $= (5 \times 20) + (5 \times 4) = 100 + 20 = 120$  hours.
- d. 8 hours =  $8 \times 60 = 480$  minutes.
- e. 9 minutes =  $9 \times 60 = 540$  seconds.
- f. 75 minutes = 60 minutes + 15 minutes = 1 hour ,15 minutes

#### Note for (f 75 min

- 60 min 15 min

## Example 3

#### Find the missing numbers.

- **a.** 4 weeks , 2 days = ——— days.
- **b.** 5 days, 5 hours = ——— hours.

to convert units.

Note

- c. 3 hours, 20 minutes = minutes. d. 2 minutes, 30 seconds =
  - seconds.

You can use different strategies

## Solution [7]

- a. 4 weeks =  $4 \times 7 = 28$  days. **So,** 4 weeks, 2 days = 28 days + 2 days= 30 days.
- **b.** 5 days =  $5 \times 24 = 5 \times [20 + 4]$ = 100 + 20 = 120 hoursSo, 5 days, 5 hours = 120 hours + 5 hours= 125 hours.
- c. 3 hours =  $3 \times 60 = 180$  minutes.
  - So, 3 hours, 20 minutes = 180 minutes + 20 minutes = 200 minutes.
- **d.** 2 minutes =  $2 \times 60 = 120$  seconds
  - So, 2 minutes, 30 seconds = 120 seconds + 30 seconds = 150 seconds.

#### your understanding

#### Fill in the blanks.

- **a.** 5 hours , 10 minutes = ---- minutes.
- **b.** 3 days , 10 hours = \_\_\_ hours.
- c. 4 minutes, 11 seconds = seconds.
  - d. 2 weeks, 2 days = -

#### **Notes** for parents:

- Remind your child the distributive property of multiplying.
- Remind your child how to multiply by multiples of 10.

### **Learn 2** Elapsed time

Elapsed time is the time that passes from the start to the end of an activity.

### Example 4

Laila entered a shopping mall, spent 2 hours, 40 minutes shopping, and spent 50 minutes at lunch in a resturant, and then left the mall. How long did Laila spend in the mall?

### Solution 🕎

There are different ways to calculate the elapsed time.

#### 1. Add Times

Hours : Minutes

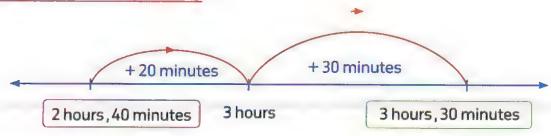
2 : 40

+ : 50

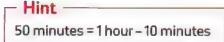
2 : 90 (Rename 90 minutes as 1 hour, 30 minutes) 60 minutes = 1 hour

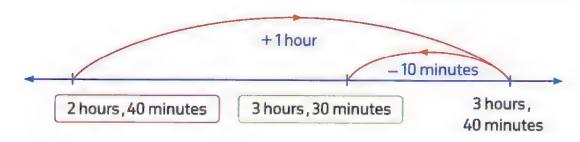
So, 2 hours + 1 hour + 30 minutes = 3 hours, 30 minutes

#### 2. Using a Time Line by Adding



### 3. Using a Time Line by Subtracting





Help your child find the elapsed time using different ways.

#### 4. Convert Units

[Think: 1 hour = 60 minutes]

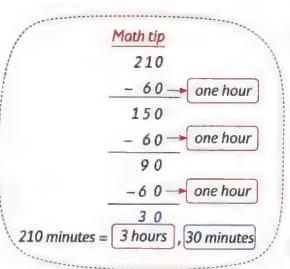
So, 2 hours =  $2 \times 60 = 120$  minutes.

Then 2 hours, 40 minutes + 50 minutes

= 120 minutes + 40 minutes + 50 minutes

= 210 minutes

Then, 210 minutes = 180 minutes + 30 minutes = 3 hours, 30 minutes



begins at 9:30 A.M.

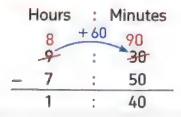
### Example 5

Yasser finds that a cinema show is full when he arrives at 7:50 A.M. next show begins at 9:30 A.M. How long will he have to wait for the next show?

### Solution S

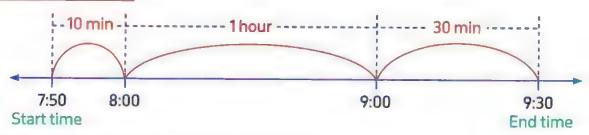
There are different ways to calculate the elapsed time.

#### 1. Subtract Times



So, he will wait 1 hour, 40 minutes for the next show.

#### 2. Using a Time Line



**So,** he will wait 1 hour , 40 minutes for the next show.

### Example 6

Bassem left school at 2:30 P.M. and arrived home 35 minutes later.

What time did Bassem arrive home?

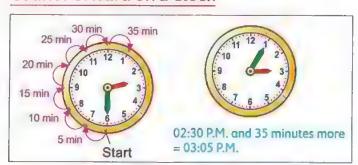
Notes for parents:

Ask your child what time will be 2 hours after 11:35 A.M.

### Solution [7]



#### 1. Count Forward on a Clock

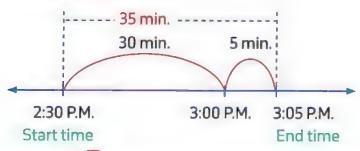


#### Math tip

When counting forward on a clock, increase one hour for each cross on 12.

So, Bassem arrived home at 3:05 P.M.

#### 2. Using a Time Line



So, Bassem arrived home at 3:05 P.M.

### Example 7

#### Calculate.

**b.** 
$$5:37+50$$
 minutes =

**c.** 
$$7:35-40$$
 minutes =

You can use

different ways to

calculate each one

### Solution



Hours **Minutes** 

#### **Another Solution**

Hours



C. Hours +60 Minutes 6 95 7 35



#### your understanding

Peter completed a bike ride 3 hours and 26 minutes after he started. He started the bike ride at 8:15 A.M. At what time did he finish?

 $87 \, \text{min} = 60 \, \text{min} + 27 \, \text{min}$ 

=1hr+27min

<sup>·</sup> Ask your child how many hours and minutes pass from the time he/she leaves for school until he/she returns home.

### Exercise

on lessons 4&5

- ▶ Units of Time
- Elapsed Time

- ROBLEM SOLVING

From the school book

1. Write the time.

a.



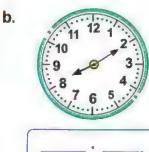


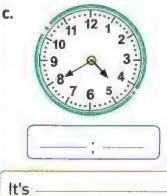
C.



2. Write the time in two ways.







It's

lt's

3. Complete each of the following tables.

a.	Minute	1	2	3	4	5	6	7	8	9	10
	Second	60									

b.	Hour	1	2	3	4	5	6	7	8	9	10	
	Minute	60										

C.	Day	1	2	3	4	5	6	7	8	9	10
	Hour	24									

d.	Week	1	2	3	4	5	6	7	8	9	10
	Day	7									

#### 4. Complete.

**a.** 5 weeks = days.

[Giza 23]

**b.** 2 hours = --minutes.

[Ismailia 24] (Giza 23]

**c.** 10 days = hours.

(Kalyoubia 23)

d. 4 weeks = days. [Alex. 23]

**e.** 5 minutes = seconds. [Behiera 23]

f. 3 hours = minutes.

g. 2 minutes = -– seconds. [Monofia – Sadat City 23]

- h. 25 days = —

weeks,days.

i. 130 minutes = -

-hours,-- minutes.

- j. 50 hours = —
- hours.

#### 5. Solve the conversion problems.

a. 📖 10 hours, 30 minutes = ----

days,

[Aswan 23]

**b.** A week , 3 days = — days.

[Alex. 24]

c. Two weeks and 3 days = \_\_\_\_\_ days.

(Cairo 24)

**d.** 1 day and 5 hours = ----

(El-Monofia 24) (El-Menia 24)

hours. e. 4 days, 20 hours = -

[Aswan 23]

f. 2 days, 12 hours = ——— hours.

[Cairo - El-Shrouk 23]

g. 10 hours, 30 minutes = \_\_\_\_ minutes.

(El-Monofia 24) [Port Said 24]

h. 2 hours, 10 minutes = - minutes.

(Souhag 23)

i. 4 minutes, 20 seconds = ——— seconds.

(El-Gharbia - Samanoud 22)

j. 🕮 6 minutes , 15 seconds = ------ seconds.

#### 6. Compute the time.



**a.** 4 = 3 : 25 + 45 minutes = -

**b.** 413:25+1:26=-

c. 10:20-7:00=

- **d.** 7:51-3:35=
- **e.** 3:15 + 2:50 = —: [Ismaillia 23]
- f. 2:45+6:17=

**q.** 3:07-42 min = -

- h. 43 1:25 = ----(Aswan 23)
- i. Ali started doing his homework at 5:15 pm, he took 40 minutes to finish it. So, he finished at pm. [Alex. 24]

7. Find the elapsed time.

a. Start:1:20 P.M. End:9:50 P.M.

**b.** Start: 6: 40 A.M. End: 10: 17 A.M.

c. Start: 4: 27 P.M. End: 8: 00 P.M.

d. From: 6: 43 A.M. To: 9: 43 A.M. e. From: 6:15 A.M.
To: noon

f. From: 11: 40 A.M.
To: 1: 20 P.M.

### Story problems on measuring time

8. Answer the following.

a. : It takes Dalia 2 hours and 15 minutes to drive to her grandmother's house.

How many minutes does the drive take?

b. An average ant works for 19 hours a day. How many hours does an ant work in 3 days?

c. Amir's family used their computer for 3 hours on Saturday, 4 hours on Sunday and 5 hours on Monday. How many total minutes were they on the computer?

d. A worker ant takes 240 naps a day. Each nap lasts 1 minute.

About how many hours did the ant nap?

### Story problems on elapsed time

nswer the following.
Mona's birthday party started at 7:00 in the evening. It took around 2 hours and 40
minutes for the party to get over. What is the time at which the party got over?
Farah was training for a marathon. Her goal was to run for 1 hour and 30 minutes.  If she started running at 8:35 A.M., what time did she finish running?
The train was scheduled to arrive at 5:10 P.M. However, it was delayed for 57 minutes.  What time was it when the train arrived?
The game started at 7:50 P.M. It ended at 10:05 P.M. How long was the game?
Paula starts to do his school homework at 3:30 P.M. He spends 45 minutes in doing his math homework and 25 minutes in doing his science homework.

- f. Jana and Maha have 5 hours to watch three movies that last 1 hour and 22 minutes, 2 hours and 12 minutes and 1 hour and 57 minutes.
  - 1. Do the girls have enough time to watch all three movies? How do you know?
  - 2. The girls decide to just watch the two shortest movies. If they start watching them at 5:30 P.M., what time will their movies end?
- g. A worker ant went out to find food for the colony. It left at 6:30 A.M. and returned at
   7:42 A.M. How long was that ant looking for food?



## Multiple Choice Questions

#### Choose the correct answer.

1.	2 hours =	minutes	2. 5 minutes and	d 10 seconds
	(El-I	Menia 24] (Alex Al-Agamy 23)	=	seconds (El-Beheira 24)
	<b>A.</b> 24	<b>B</b> . 60	A. 15	<b>B.</b> 50
	<b>C</b> . 120	<b>D.</b> 360	<b>C.</b> 310	<b>D</b> . 130
3.	5 weeks, 5 day	s = days. [Cairo - Rod El-Farag 23]	Y Comments of the Comments of	nours =
	<b>A.</b> 10	<b>B</b> . 25	A. 22	B. 4
	<b>C.</b> 40	<b>D</b> . 50	<b>C.</b> 62	<b>D</b> . 50
<b>5.</b> <sup>©</sup>	1 day and 5 hou	urs = ——— hours. [Beni Suef 24] [Souhag 22]	6. 4 hours, 10 mi	nutes = minutes. (Cairo 24)
	A. 29	B. 65	A. 14	B. 200
	<b>C.</b> 15	<b>D</b> . 35	C. 240	<b>D.</b> 250
-	2:50 + 40 min	utes =	8. 6:43 – 50 min	utes =
()	A. 2:10	B. 3:10	<b>A.</b> 6:53	B. 5:07
	<b>C.</b> 2:54	<b>D.</b> 3:30	<b>C.</b> 5:53	<b>D.</b> 6:07
9.	minutes the tin	s 02 : 35, after ten ne will be (Giza 24)		f a film show is 2 hr, 15 min. 0 p.m. ,when will it end?
	<b>A.</b> 11:35			[El-Monofia 24]
	<b>B.</b> 02:50		<b>A.</b> 5:45 p.m.	<b>B.</b> 8:34 p.m.
	<b>C.</b> 02:45		<b>C.</b> 5:30 p.m.	<b>D.</b> 5:54 p.m.
<b>11.</b>	-	nours at school. If we te Adel's school day in	12. Fatima started 50 minutes, so	l cooking at 6:15 P.M. for , she finished
	minutes, we —	[Beni Suef 22]	atP.M	1. (Giza – Abo El-Nomros 23)
	A. add 6 with 6	0 <b>B.</b> add 6 with 24	<b>A.</b> 6:53	<b>B</b> . 6:55
	C. multiply 6 b	y 60 <b>D.</b> multiply 6 by 24	<b>C.</b> 7:00	<b>D.</b> 7:05

Lesson

6

## Applications of Measurement 1 [Addition and Subtraction]



### **Problem**

Ali and Giovanni each caught a fish.

The two fish have

a mass 8,250 g

The mass of Giovanni's fish

is 3 kg, 530 g

What is the mass of Ali's fish?





#### **Understand**

- What are you asked to find?
- What information will you use?
- Is there any information you will not use? If so, what?



#### 100

- What strategies can you use to solve the problem?
  - Convert measurement units first.
  - Use subtraction standard algorithm.



#### Solve

• How can you use the strategy to solve the problem?

The mass of Giovanni's fish = 3 kg, 530 g (Think: 1 kg = 1,000 g)

$$= 3,530 g$$

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The mass of Ali's fish = 8,250 - 3,530

=4,720 g

= 4 kg, 720 g



#### Check

• What other strategy could you use?

#### Notes for parents:

 In this lesson, your child will use addition and subtraction to solve multistep story problems involving length, mass, capacity, and time.



### Example 1

Abeer purchased 7 kilograms of sugar.

10 kilograms of flour, 500 grams of cocoa.

275 grams of pecans, and 225 grams of coconut.

What is the total mass of her groceries

in kilograms?

### Solution [ ]

The total mass = 7 kg + 10 kg + 500 g + 275 g + 225 g

$$= (7 + 10) kg + (500 + 275 + 225) g$$

$$= 17 \text{ kg} + [775 + 225] \text{ g}$$

$$= 17 \text{ kg} + 1,000 \text{ g}$$

$$= 17 \text{ kg} + 1 \text{ kg}$$

 $= 18 \,\mathrm{kg}$ 

#### Strategies

- Estimate
- Use smaller numbers
- Draw a picture of model (number line, bar model, diagram, and so on]
- · Write an equation with the unknown
- Use the standard algorithm
- Find a hidden question
- Convert measurement units first
- Make a benchmark number

[Associative property]

(Convert measurement units)

### Example 2

A tailor used 1 m, 35 cm of cloth to make a shirt and 2 m, 15 cm to make trousers.

What is the total length of cloth used by the tailor to make a shirt and trousers?

### Solution [7]



The total length = 1 m + 35 cm + 2 m + 15 cm

$$= [1 + 2] m + [35 + 15] cm$$

[Commutative and associative]

$$= 3 m + 50 cm$$

$$= 3 \text{ m}$$
 and  $50 \text{ cm} = 350 \text{ cm}$ 

#### **Another strategy**

Convert measurement units first

$$1 \, \text{m}$$
,  $35 \, \text{cm} = 135 \, \text{cm}$ 

$$2 \, \text{m}$$
,  $15 \, \text{cm} = 215 \, \text{cm}$ 

The total length 
$$= 135 + 215$$

Use Break up and Bridge strategy

$$135 = 100 + 30 + 5$$

$$215 = 200 + 10 + 5$$

$$300 + 40 + 10 = 350 \, \text{cm}$$

Ask your child what strategy he/she decided to use, and why he/she chose it.

### Example

A fish tank with a capacity of 92 liters is filled with 23,000 milliliters of water.

How many more liters of water are needed to fill it up completely?

### Solution [



Convert measurement units first.

23,000 mL = 23 L[Think: 1,000 mL = 1L]

Number of liters needed to fill up the tank

(8)(12)

= 69 L

[Standard subtraction algorithm]

### Another way to subtract 92 - 23

Add to subtract strategy 23 + 7 = 30

$$90 + 2 = 92$$

$$50,7+60+2=69$$

Then 
$$92 - 23 = 69$$

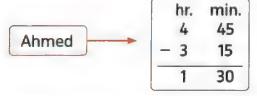
### Example 4

Ahmed studied from 3:15 – 4:45. His sister, Sarah studied from 4:30 – 6:15

Who studied longer and by how much?

### Solution [V]





The time of Ahmed = 1 hr. and 30 min.

$$= 60 + 30 = 90 \text{ min.}$$

The time of Sarah = 1 hr, and 45 min. = 60 + 45 = 105 min.

So, Sarah studied longer than Ahmed and the difference = 105 - 90 = 15 min.

### EN SE

#### your understanding

- 1. Two wooden planks of lengths 12 m, 60 cm and 18 m, 63 cm are glued together to make a long wooden bridge. What is the total length of the bridge?
- 2. Ashraf purchased 7 kg, 200 g of sugar, 9 kg, 395 g of rice. What is the total mass which Ashraf purchased?

#### Notes for parents:

Ask your child to use different strategies to solve the problems.

# Exercise 5 on lesson 6

## Applications of Measurement 1 [Addition and Subtraction]

on lesson 6	
● REMEMBER ● UNDERSTAND ○ APPLY ♣ PROBLEM SOLVING	From the school book
First: Problems involving length  1. One box is 44 cm, 5 mm tall. Another box is 35 cm. tall. How tall will the boxes be if both are stocked one on top of the other?	Strategies  • Estimate  • Use smaller numbers  • Draw a picture of model (number line, bar model, diagram, and so on)  • Write an equation with the unknown  • Use the standard algorithm  • Find a hidden question  • Convert measurement units first  • Make a benchmark number
2. Sameh has 63 m of ribbon. If he cuts 56 m, 21 cm rik be left?  3. Rania is measuring two ant lines. Colony A's ant line is 500 millimeters long. How many centimeters	ine is 30 centimeters long, and Colony B's
4. An ant from Colony A walked 2 kilometers in a day.  meters in a day. Which ant walked the farthest and ho	
5. Taher grew 10 centimeters in 1 year. He is now 1 r	neter, 6 centimeters tall. How many

### Second: Problems involving mass

6.	Adam bought 5 kg of milk and 200 g. Re-write this weight in grams. (Cairo 24)
7.	Zeina purchased 8 kilograms of sugar, 10 kilograms of flour, 500 grams of cocoa, 225 grams of pecans, and 275 grams of coconut. What is the total mass of her groceries in kilograms?
8.	In Colony A, the ants collect 950 grams of food. If they consume 25 grams of food on Monday and 37 grams of food on Tuesday, how many grams of food are left?
9.	The potatoes Aya bought weight 2 kilograms, 920 grams. Her onions weighed 1,075 grams less than the potatoes. How much did the potatoes and onions weight together?
10.	Ali's cat weighs 7 kilograms and his dog weighs 17 kilograms. When Ali took them to the vet, he learned that his cat gained 450 grams and his dog gained 120 grams. How much do his two pets weigh in all now?
Th	ird : Problems involving capacity
11.	A fish tank with a capacity of 100 liters is filled with 20,000 milliliters of water. How many more liters of water are needed to fill it up completely?
12.	A milkman sold 46 L, 200 mL of milk on 3 days of a week and 53 L, 195 mL of milk in the next 2 days. What quantity of milk did he sell in the 5 days?

13. Mr. Emad bought four 2-liter bottles of soda for the Primary 4 picnic. If there were 2 liters and 829 milliliters of soda remaining at the end of the picnic, how many milliliters of soda did the students drink?

#### Fourth: Problems involving time

- 14. A bus leaves for Cairo at 4:30 P.M. It takes 1 hr, 25 min. to reach there. At what time will it reach at Cairo?
- 15. The duration of a film show is 3 hr, 15 min. It starts at 6: 30 P.M. When will it end?
- 16. A pharaoh ant grows from egg to adult in 45 days. A carpenter ant grows from egg to adult in 12 weeks. Which species takes longer to grow from egg to adult? How much longer?
- 17. Worker ants take power naps totaling up to 250 minutes a day. A queen ant may sleep up to 9 hours a day. Which ant sleeps longer and by how many minutes?

### Challenge

18. Amal has a rope of length 40 m. She gave 12 m, 53 cm to Amgad, 18 m, 35 cm to Bassem and 9 m, 7 cm to Ayman. What length of rope is still left with Amal?



#### Choose the correct answer.

1. Shaimaa poured 5 L of water into a beaker. During an experiment, she added 200 mL of water.

How much water was in the beaker at the end of the experiment?

- A. 205 mL
- **B.** 2,500 mL
- C. 4,800 mL
- **D.** 5,200 mL
- 2. Bassem bought 3 meters of rope. He then cut off 170 centimeters of rope to glue around the edge of a pot. How many centimeters of rope does Bassem have left?
  - A. 173
- B. 470

- C. 130
- D. 167

- 3. Hany ran 1,800 meters on Saturday and 3 km, 200 m on Sunday. How many meters did be run in all?
  - A. 5
- **B**. 1,400
- **C.** 4,000
- D. 5,000
- 4. A box contains 2 bags of sugar. If the mass of each one is 1 kg and 300 g, what is the total mass in grams?
  - A. 600
- B. 2,600
- **C.** 2,800
- **D.** 1,300

- 5. If Vector studied from 4:10 to 5:00, then he studied minutes.
  - **A**. 60
- B. 110
- C. 40
- **D.** 50

- 6. Peter is over weight. He is 105 kg. If his aim his aim is to loss 500 g per week, then

  Peter's mass after 2 weeks is kg.
  - A. 104
- **B**. 105
- C. 106 -
- **D.** 107
- 7. Mr. Bassem bought 3 cartons of juice which are 2 liters each. If his three children finished 4,700 milliliters, then the left of juice is \_\_\_\_\_ mL
  - A. 2,300
- **B.** 2,700
- C. 300

**D**. 1,300



# Lesson

### **Applications of Measurement 2** [Multiplication and Division]



### Example 1

Wael has a 20 meter-long piece of wood. He wants to cut it into 4 equal lengths. How long should each cut piece be in meters? How long will each of these pieces be in centimeters?

#### Solution W



- The length of each piece in meters =  $20 \div 4 = 5$  m [Think:  $4 \times 5 = 20$ ]
- The length of each piece in centimeters =  $5 \times 100$

 $= 500 \text{ cm} \{ \text{Think} : 1 \text{ m} = 100 \text{ cm} \}$ 

### Example 2

A cow gives 22 Land 500 mL of milk daily. If the milkman has 10 cows, how much milk does he got in liters in a day?

And if the daily milk is filled in bottles of capacity 1,000 mL,

how many bottles will be required?

### Solution 🕎



- The milk from 10 cows in mL =  $22,500 \times 10 = 225,000$  mL The milk from 10 cows in L =  $225,000 \div 1,000 = 225$  L
- The capacity of one bottle is 1,000 mL = 1L Then the milkman needs 225 bottles.

#### **Notes** for parents:

 In this lesson, your child use multiplication and division to solve multistep story problems involving length, mass, capacity, and time.



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### Example 3

A box can carry a total mass of 10 kg. Laptops have to be packed inside the box.

If the mass of each laptop is 2,000 g, how many laptops can be packed inside the box?

### Solution 🔯

- The mass of each laptop = 2,000 g = 2 kg [Think : 1,000 g = 1 kg]
- The number of laptops can be packed inside the box =  $10 \div 2 = 5$  laptops

### Example 4

Mona is stringing beads to make a necklace. She is using 30 of the 8 mm beads, 70 of the 4 mm beads, and 40 of the 2 mm beads. How long will her finished necklace be in cm?

### Solution [

 $30 \text{ of } 8 \text{ mm} = 30 \times 8 = 240 \text{ mm}$ 

 $,70 \text{ of } 4 \text{ mm} = 70 \times 4 = 280 \text{ mm}$ 

and 40 of 2 mm =  $40 \times 2 = 80$  mm

So, the length of her finished necklace =  $240 + 280 + 80 = 600 \text{ mm} = 600 \div 10 = 60 \text{ cm}$ 

### Example 5

Salwa is a runner. She spends half an hour every day running.

How many minutes in total does she run for during a 9-day period?

### Solution 😰

What she runs each day = Halfan hour = 30 min.

What she runs for during a 9-day period =  $30 \times 9 = 270$  min.



your understanding

In a relay race, 4 people ran 3,000 meters each. In a distance race, John ran 15 kilometers.

Who ran farther, the whole relay team or John? How much farther?

#### Notes for parents:

- Tell your child that multistep problem needs to know what information do you have to help you solve the problem.
- Help your child read and understand to figure out the problem and use the information to decide which operation to use.

# Exercise | 6 | on lesson 7

## Applications of Measurement 2 [Multiplication and Division]

	REMEMBER	ONECRSTATION	UPPLY (	- PROBLEI	M SOLVING		From the	school book		
Fi	rst : Pro	oblems inv	olving len	igth						
1.	Ants walk about 5,000 meters each day.									
5	How ma	iny meter do	ants walk	in 5 days?				[El – Menia 24]		
2.	Arunne	r covers 750	meters in a	an hour. Cal	culate the	e distance l	ne covers in 5 hou	Irs. [Alex.24]		
3.		g should ea					it into 3 equal ler ach of these pied			
4.		travelled 9 d ny kilomete				5,000 met	ers each day.			
Se	cond : I	Problems	nvolving	mass						
<b>5.</b>	If the ma	ss of a box is	320 kg, the	en find the	mass of 4	boxes with	n the same mass.	[Alex. 24]		
6.	Ehab week. If h	is a weightli e does that	fter. He has for 5 weeks	a mass of s, what will	100 kilogr his mass	ams. His ai	im is to gain 500 nd ?	grams per		
)		ned 1 gram a					ants walking by. I much weight wa			

#### Third: Problems involving capacity

- 8. A water purifier cleans 10 L ,50 mL of water each day. How much water will be cleaned by the cleaner in 10 days?
- 9. Ayman is a runner. While Ayman is in training, he needs to drink 500 milliliters of water 4 times per day. How many liters of water will that be for 1 week?
- Mostafa has 32 liter bottles of soda. If he divides the soda equally between himself and his7 friends, how much soda will each person have?

#### Fourth: Problems involving time

- 11. Hossam sleeps 8 hours each day. How many hours did he sleep in 5 days? [Giza 24]
- 12. An ant works for 19 hours a day. How many hours does an ant work in 3 days?

  [Kafr El-Sheikh 24] [Luxor 24]
- 13. Amany is a swimmer. She spends half an hour every day swimming. How many minutes in total does she swim for during a 5-day period?

  (Aswan 23)

### Challenge

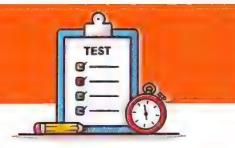
14. An ant is at the bottom of a 20-meter deep well and is trying to get to the top. Each day it climbs 4 meters up, but each night it slides back 2 meters. How many days does it take for it to get out of the well?

## Multiple Choice Questions

#### Choose the correct answer.

1	Adel spends 6 ho	ours at school. If we want t	to calculate Adel's school day in minutes,				
	we			[Giza – Awseem 23]			
	A. add 6 with 60		B. add 6 with 2	4			
	C. multiply 6 by	60	D. multiply 6 by	/ 24			
2.	A building is 20 n	neters tall. A bridge is 5 me	ters tall. How many tir	mes the building is taller			
	than the bridge?			[Alex Al-Agamy 23]			
	<b>A.</b> 3	B. 4	<b>C.</b> 15	<b>D</b> . 10			
3.	Sami has 25 mete	er-long piece of cloth. If	4. If Mina travelled	110 days continuously.			
	he wants to cut it	into 5 equal pieces, the	He travelled 4,0	00 meters each			
	length of each on	e equals ————	day, then he wa	lk in all about —			
			kilometers.				
	A. 4 m	<b>B.</b> 5 m	A. 4	<b>B</b> . 40			
	<b>C.</b> 50 cm	<b>D.</b> 125 cm	<b>C</b> . 400	<b>D</b> . 4,000			
5.	If Mohamed rides	his cycle 10 km per day	6. If the total mass	of 10 balls having same			
,	, then he covers	——— in 5 days.	mass is 130,000	grams, then the mass			
			of each ball is —	kg.			
	<b>A.</b> 2 km	<b>B.</b> 5 km	<b>A.</b> 130	<b>B.</b> 1300			
	<b>C.</b> 5,000 m	<b>D</b> . 50 km	C. 13	<b>D.</b> 13,000			
7.	If ants walk about	3,000 meters each	8. An ant walks up	to 2 km per day. If the			
	day, then the ant	s walk km	ant continues th	is for 10 days, then the			
	in 5 days.		ant will walk abo	out meters.			
	A. 3	<b>B.</b> 150	<b>A</b> . 200	<b>B.</b> 2,000			
	<b>C</b> . 15,000	<b>D.</b> 15	<b>C</b> . 20,000	<b>D</b> . 200,000			

### **Unit Three Assessment**



#### 1. Choose the correct answer.

- **1.** 5 kg = 5,000 ----

  - A. m B. day
- C. g

D. L

2. 6 m + 25 cm = \_\_\_\_ cm

[Cairo 24]

- - **A.** 6,025 **B.** 625

**C.** 6,205

D. 652

3. 7 liters and 600 mL = \_\_\_\_ mL

(El-Monofia 24)

- A. 76
- **B.** 760
- **C.** 7,600

**D**. 70,600

4. 1 day and 6 hours = hours

[Cairo 23]

- A. 7
- **B**. 30

C. 66

D. 36

- 5. 5,050 mL = \_\_\_\_ L , 50 mL
  - A. 5
- **B**. 50

**C.** 500

**D.** 5,000

**6.** 2 kg, 250 g + 3 kg, 750 g = ----- kg

[Giza 24]

- A. 5
- B. 6

C. 7

D. 8

- The elapsed time from 3:50 A.M. to 7:00 A.M. is ———
  - A. 3 hr, 50 min

B. 3 hr, 10 min

C. 4 hr, 10 min

D. 4 hr, 50 min

#### 2. Complete each of the following.

1. 5 Weeks = \_\_\_\_ days

[Kafr El-Sheikh 24]

- 2. 9,000 mL = \_\_\_\_\_ liters
- (Port Said 24) (Souhag 23)
- 3. 15,423 m = ----- km, ----- m
- [El-Monofia 24]

4. 35 kg, 76 g =\_\_\_\_\_ g

- [Kafr El-Sheikh 24]
- 5. 31,310 g = ----- kg, ----- g
- 6. 8 meters, 45 cm = \_\_\_\_ cm [El-Monofia Berket El-Sabaa 23]
- 7. 8:25 + 35 minutes = \_\_\_\_
- 8. 6:34-1:25 = ----



#### Choose the correct answer.

1. 5L, 13mL = -

[El-Monofia - Quesna 23]

- A. 513
- **B.** 5,013

- **C.** 50,013
- **D**. 500,013

6 minutes and 30 seconds = \_\_\_ seconds [Cairo - El-Marg 23]

- A. 630
- **B.** 390

**C.** 330

**D.** 306

- 3. ——— kilometers and 45 meters = 5,045 meters

**D.** 4,055

- A. 5
- **B**. 545

C. 45

4. 6 liters = \_\_\_\_

(Cairo 23)

[Giza 24]

- **A.** 6,000
- **B.** 600

C. 60

**D.** 60,000

**5.** 5 m = \_\_\_\_ cm

[El-Beheira - Hosh Essa 23]

- A. 5
- **B**. 50

**C.** 500

**D.** 5,000

1 week and 3 days = \_\_\_\_\_ - days

(Giza 23)

- A. 7
- **B**. 8

C. 9

D. 10

- **7.** 17 tons 7,000 kg
  - A. >
- B. =

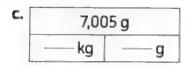
C. <

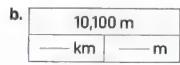
D. otherwise

#### Answer the following.

- 1. A fizzy can of mass 300 g, Jana bought 6 cans. What is the total mass of cans in kilograms and grams?
- 2. Sarah purchased 3 kg ,  $400 \, \text{g}$  of sugar and 5 kg ,  $217 \, \text{g}$  of rice. What is the total mass which Sarah carried?
- 3. 10 books of height 8 cm, 5 mm each are stacked over one another. What is the total height so obtained?
- 4. Find each missing number.

a.		- mL
	9 L	450 mL











**Number Sense and Operations** 

UNIT 4

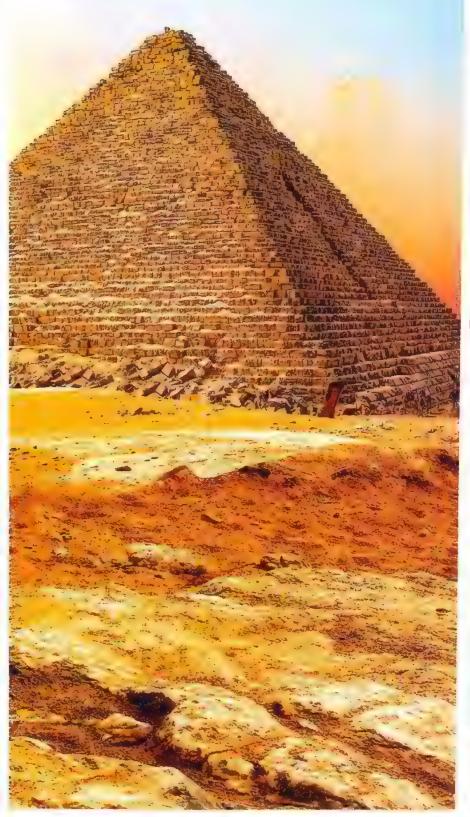
### **Area and Perimeter**

► Concept 1: Explore Area and Perimeter



# CONCEPT

## Explore Area and Perimeter



#### Lesson 1

Finding Perimeter

#### Learning Objectives:

- Students will define perimeter.
- Students will use formulas to calculate the perimeter of rectangles.
- Students will explain how to calculate perimeter.

#### ▶ Lesson 2

**Finding Area** 

#### Learning Objectives:

- Students will difine area.
- Students will use formulas to calculate the area of rectangles.
- Students will explain how to calculate area.

#### ▶ Lesson 3

Unknown Dimensions

#### **Learning Objectives:**

 Students will use formulas to calculate unknowns when given some dimensions of rectangles.

#### Lesson 4

Complex Shapes

#### **Learning Objectives:**

- Students will calculate the area and perimeter of complex shapes.
- Students will explain their strategies for finding the area and perimeter of complex shapes.

#### **Fast Fact**

The Great Pyramid of Giza (also known as the pyramid of Khufu) is the largest of the three pyramids. Its base is just like a square, the length of each side at the base averaging 230 meters.

What is its perimeter?!

### **Finding Perimeter**

### Learn 1 Using formula to find the perimeter of a rectangle



#### **Problem**

Omar is a farmer. His rectangular farm is 60 m long and 40 m wide.

He wants to install a fence all around his farm.

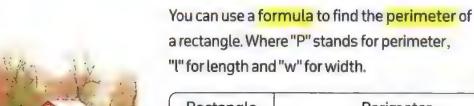
What is the length of the fence?





#### Remember

- Perimeter is the distance around the figure.
- Each two opposite sides in the rectangle are equal in length.



Perimeter	Formula	
Perimeter = length + width + length + width	P=l+w+l+w	
or Perimeter = [2 × length] + [2 × width]	or $P = [2 \times l] + [2 \times w]$	
Or	$or$ $P = 2 \times [i + w]$	
	Perimeter = length + width + length + width or	

So, the length of the fence = 
$$60 + 40 + 60 + 40$$
 [Think: P =  $1 + w + 1 + w$ ]  
=  $100 + 100 = 200 \text{ m}$ 

Or the length of the fence = 
$$[2 \times 60] + [2 \times 40]$$
 [Think: P =  $[2 \times 1] + [2 \times w]$ ]  
=  $120 + 80 = 200 \text{ m}$ 

Or the length of the fence = 
$$2 \times (60 + 40)$$
 [Think:  $P = (2 \times (l + w))$ ]  
=  $2 \times 100 = 200 \text{ m}$ 

#### Notes for parents:

 Make sure your child understand that a formula is a rule that tells how to solve a problem.



### Learn 2 Using formula to find the perimeter of a square

• All squares are rectangles. Square has 4 equal sides.

You can use a formula to find the perimeter of a square.

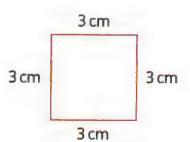
Where "P" stands for perimeter and "s" stands for side length.

Square	Perimeter	Formula	
S	Perimeter = side + side + side + side	P=s+s+s+s	
s s	or	or	
5	Perimeter = 4 × side	P=4×s	

#### For Example:

To find the perimeter of the opposite square use the formula

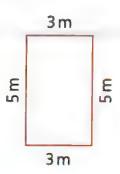
$$P=s+s+s+s$$
  
= 3+3+3+3=12cm



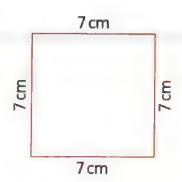
### Example 1

Calculate the perimeters of the following shapes. Use different formulas to solve each problem.

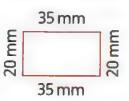
a.



b.



C.



### Solution [ ?

- **a.** First formula:  $P = (2 \times 1) + (2 \times w) = (2 \times 5) + (2 \times 3) = 10 + 6 = 16 \text{ m}$ 
  - Second formula:  $P = 2 \times [l + w] = 2 \times [5 + 3] = 2 \times 8 = 16 \text{ m}$
- **b.** First formula: P = s + s + s + s = 7 + 7 + 7 + 7 = 28 cm
  - Second formula:  $P = 4 \times s = 4 \times 7 = 28 \text{ cm}$
- Remind your child to take careful note of the measurement unit used in each problem.
- Ask your child to find the perimeter of a window in his/her room using a formula.

c. • First formula: P = l + w + l + w = 35 + 20 + 35 + 20

• Second formula :  $P = 2 \times (l + w) = 2 \times (35 + 20) = 2 \times 55 = 2 \times (50 + 5)$ 

50 5

= 100 + 10 = 110 mm



### Example 2

Ahmed wants to make a rectangular carpet of perimeter 12 m.

Draw different rectangles that could represent his carpet.

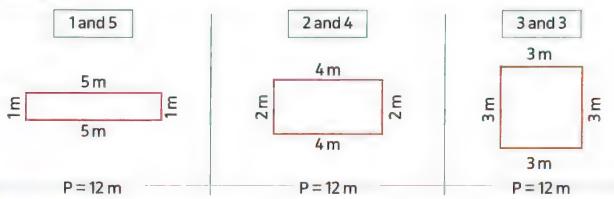
### Solution [V]



1. Find half of perimeter (half of perimeter = l + w)

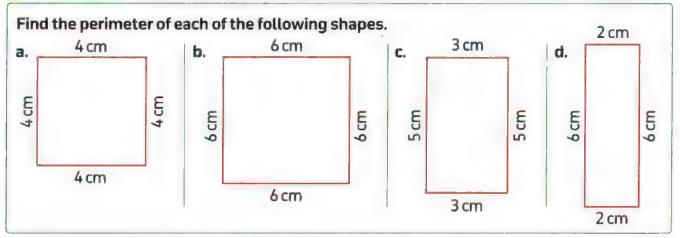
$$l + w = 12 \div 2 = 6 \text{ m}$$

2. Find two numbers their sum is 6, these two numbers are length and width of the required rectangle



### Check!

#### your understanding



#### Notes for parents:

• Review the distributive property using numbers rather than measurements.

## **Exercise** on lesson 1

### **Finding Perimeter**

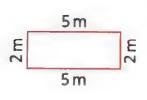


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O APPRY

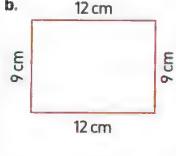
ROBLEM SOLVING

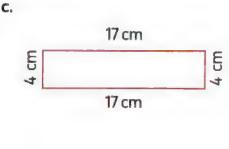
- From the school book
- 1. Use the formula P = l + w + l + w to calculate the perimeter of each of the following rectangles.



P=-



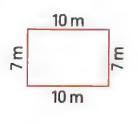




P =-

2. Use the formula  $P = (2 \times l) + (2 \times w)$  to calculate the perimeter of each of the following rectangles.

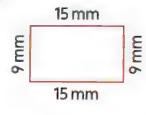
a.



P = -

b.

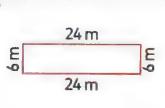
P =-





P =

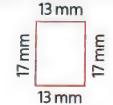
3. Use the formula  $P = 2 \times (l + w)$  to calculate the perimeter of each of the following rectangles.



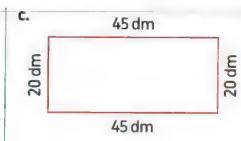
P = -

b.

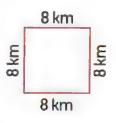
P =



P=-

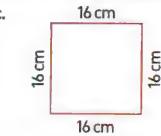


4. Use the formula  $P = 4 \times s$  to calculate the perimeter of each of the following squares.



b.

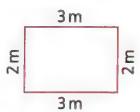




P=

5. Calculate the perimeter of each of the shapes that follow. Use two different formulas to solve each problem. Show your work. 9 cm

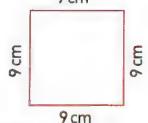
a.



· First formula:

Second formula:

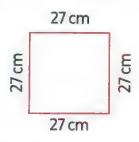
b.



· First formula:

Second formula:

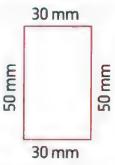
C. (a)



First formula:

Second formula: -

d. [11]



First formula:

Second formula: -

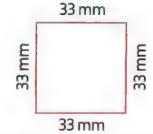
e. . . . . .



First formula: -

Second formula:

f.



First formula: -

· Second formula:

6. Complete.

a. The perimeter of the rectangle = (length + width) × \_\_\_\_\_

[Cairo - El-Salam 23]

b. A rectangle has length (l) and width (w), its perimeter = -

[Cairo 23]

c. If the side length of a square is (s), then its perimeter =

[Alex. - Al-Agamy 23]

d. A square of side length 3 cm, then its perimeter = cm [Cairo - Rod El-Farag 23]

e. A carpet in the shape of a square of side length 3 m, its perimeter = —

f. The perimeter of the rectangle its length is 7 cm and its width is 5 cm equals ---- cm

(Souhag 23)

g. A rectangular picture its length is 8 cm and its width 5 cm, then its perimeter is

[Ismailia 24]

7	Find the perimeter of each of the following	ng.	(El-Menia 24)
	a. E <sub>D</sub> 4 cm	b. & 5 cm	
8.	A rectangular carpet is 6 meters long and		[El-Menia 24]
9.	A rectangular gymnasium is 7 meters lon	ng and 4 meters wide .Find its perimet	er. [Port Said 22]
10.	Find the perimeter of the rectangle with a le	ength of 8 cm and a width of 6 cm (Alex.	- First Montaza 23]
11.	Find the perimeter of the rectangle who	se length is 16 cm and its width is 14 (	cm. (Cairo 23)
12.	Sarah is putting a border around the e 30 centimeters long. How long will the b	edge of a square cake. One side of the order of Sarah's cake be?	e cake is
<b>13.</b> <sup>©</sup>	Sherif is building a square picture frame. What will the perimeter of the frame be?	Each side will be 63 millimeters long?	j.
14.	A soccer team is roping off part of a fie crowd, they need a space that is 105 met they need for this part of the field?	eld to play soccer. To have enough roc ers long by 68 meters wide. How mu	om for a large ch rope will
<b>15.</b>	A carpenter ant walked a perimeter of that could represent its walk.	100 centimeters. Draw two different	rectangles

## Multiple Choice Questions

#### Choose the correct answer.

1. A rectangle its length is I and its width is w What is its perimeter?

[Port Said 24] [Cairo 23]

- A. I+w
- B. L×w
- **C.**  $2 \times [1 + w]$
- **D.**  $[2 \times l] + w$
- 2. Which choice shows the formula for the perimeter of a square?

[P = perimeter, s = side length]

- A. P=4+s
- B.  $P = 4 \times s$
- C. P=s×s
- D. P=s+s

3. The perimeter of a square of sid length 10 cm iscm

(El-Menia 24)

- **A.** 100
- **B.** 10

C. 20

D. 40

4. A square whose side length is 5 cm, then its perimeter is \_\_\_\_ cm

[El-Monofia - Sers El-Layyan 23] (Cairo - El-Nozha 23]

A. 20

**B.** 25

- C. 15
- **D**. 35

5. A rectangle with length 8 cm, width 5 cm, then its perimeter = \_\_\_\_ cm

[El-Monofia 24] [Port Said 24]

A. 40

**B**. 13

C. 26

**D**. 3

6. The perimeter of rectangle of dimensions 4 cm and 5 cm is ——— cm

[Kafr El-Sheikh 24]

- **A**. 20
- B. 9

C. 18

D. 36

7. A rectangle has 4 cm width and 6 cm length, then its perimeter = cm

[Cairo 24]

- A. 10
- B. 20

C. 24

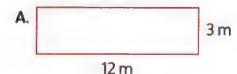
D. 48

8. The perimeter of the opposite rectangle equals

5 m 2m

[Cairo - El-Nozha 23]

- A. 10 m
- **B.** 20 m
- C. 14 m
- D. 14 cm
- 9. Which of the following rectangles has perimeter of 32 m?



B.



4 m 12 m

D.

5 m 10 m

### **Finding Area**



### Learn 1 Using formula to find the area of a rectangle

Sameh tiled the rectangular floor in his front hall. He used square tiles that measure 1 meter on each side.

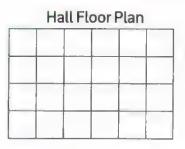
How many tiles did he use?

#### One Way

You can count square units to find the area.

1	2	3	4	5	6
7	8	9	10	11	12
13	14	15	16	17	18
19	20	21	22	23	24

Record your answer in square units. A = 24 square meters.



#### Remember

Area is the number of square units needed to cover the surface of a figure.

### **Another Way**

You can also use a formula.

The formula for the area of a rectangle is

Area = length  $\times$  width  $| Or | A = l \times w$ 

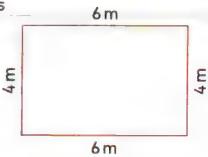
Use the formula to find the area.

 $A = l \times w$ 

 $A = 6 \times 4$ 

A = 24 square meters

So, Sameh used 24 tiles.



#### Math tip

You can write square meters as m2

, and write square centimeters as cm<sup>2</sup>

#### Notes for parents:

Ask your child to find the area of a carpet in his/her room using a formula.

### Learn 2 Using formula to find the area of a square

The formula for the area of a square is

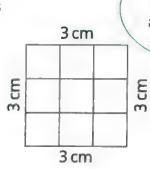
Area = side length  $\times$  itself Or  $A = s \times s$ 

#### For Example:

The area of the opposite square

$$A = 5 \times 5 = 3 \times 3$$

= 9 square centimeters [cm<sup>2</sup>]



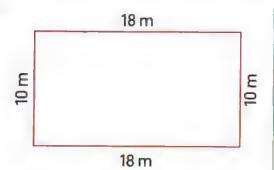
Try to count square units to find the area, you will get the same result,



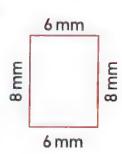
### **Example**

Find the area of each of the following.

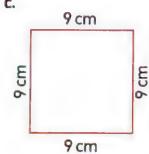
a.



b.



C.



### Solution [ ]

a. 
$$A = l \times w = 18 \times 10 = 180 \text{ m}^2$$

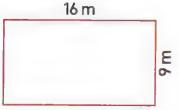
**c.** 
$$A = s \times s = 9 \times 9 = 81 \text{ cm}^2$$

**b.** 
$$A = l \times w = 8 \times 6 = 48 \text{ mm}^2$$

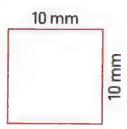
### Example 2

Find the area and perimeter of each figure.

a.



b.



#### Remember

- Perimeter : Measurement of the distance around the shape.
- · Area:

Measurement of the space inside the shape.

#### Notes for parents:

Ask your child to use a formula to calculate the area of the door of his/her room.

### Solution [7]



a. 
$$A = 1 \times w = 9 \times 16 = 9 \times [10 + 6] = 90 + 54 = 144 \text{ m}^2$$

$$P = 2 \times (1 + w) = 2 \times (9 + 16) = 2 \times 25$$
  
=  $2 \times (20 + 5) = 40 + 10 = 50 \text{ m}$ 

**b.** 
$$A = s \times s = 10 \times 10 = 100 \text{ mm}^2$$
  
 $P = 4 \times s = 4 \times 10 = 40 \text{ mm}$ 

### Example 3

A small fish farm in the shape of a rectangle. Its dimensions are 10 meters and 8 meters. What is the area of the fish farm?

### Solution [V



$$A = 1 \times w = 10 \times 8 = 80 \text{ m}^2$$

### Example 4

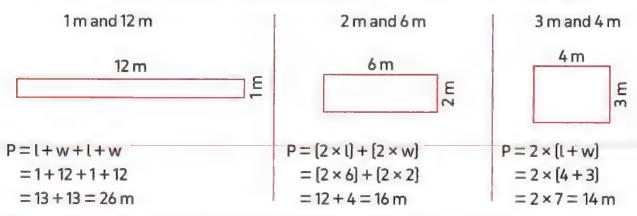
The area of a piece of paper in the shape of a rectangle is 12 square meters.

What is the perimeter of this piece? Draw your answer and write the dimensions.

### Solution [V]



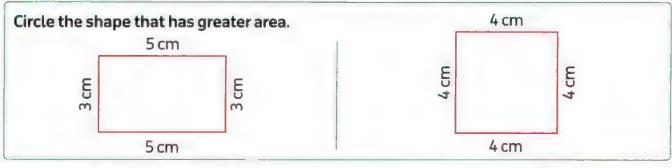
You need to find two numbers their product is 12, these two numbers are the rectangle dimensions.



You can use different formulas to calculate the perimeter of a rectangle.

### j | Li 1;

### your understanding



Challenge your child to draw many rectangles with area 30 cm<sup>2</sup>.

## Exercise on lesson 2

### **Finding Area**

REMEMBER

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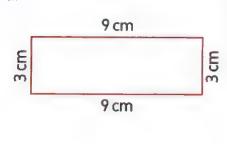
O APPLY

- PR	OBLEM	SOLV	INC
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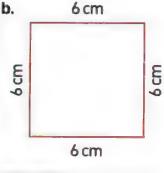
From the school book

1. Write the formula of the area of each rectangle or square, then find its area.

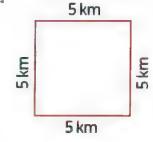




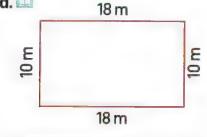
b.

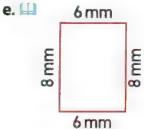


C.

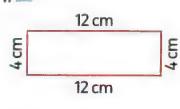


d. 📖



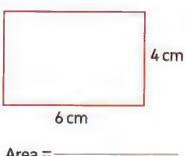


f. 🛄

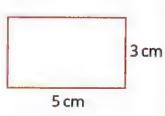


2. Find the area and perimeter of each figure.

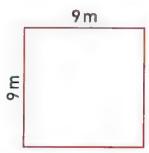
a.



b.



C.



Area =-

Perimeter =

[Cairo 24]

[El-Monofia - Sadat City 23]

Area = -

Perimeter =-

(Giza 24) (El-Menia 23)

Area = -

Perimeter =

		[Alex West 23]
s area is —	El-Meni	ia - Dir Mawas 22)
cm <sup>2</sup>	(Port	Said 24) (Cairo 24)
— cm <sup>2</sup>	Ε	[Alex. 24]
n <sup>2</sup>	70	(Cairo 24)
ngth is 9 me	ters,	
[Alex	Agamy 23) (Ca	iro – El-Salam 23)
n its area = -		(Cairo 24)
s area =	cm <sup>2</sup> (C	airo - El-Marg 23)
and 3 cm is -		
		this
	10 cm	(Port Said 24)
_ 8		
<u></u>		
	25 m	(Dow Cold 2/)
_		[Port Said 24]
5		10 m
_	25 m	
n and width i	s 5 cm	[Cairo 23]
ts area in sq	uare meters.	[Cairo 24]
gth 5 meters		(Beni Suef 24)
s to cut a pie	_	cover this El-Kalyoubia 22)
	m2 ngth is 9 me (Alex n its area = and 3 cm is n is 8 mm, th	ngth is 9 meters,  [Alex. – Agamy 23] [Can its area = cm² [Cand 3 cm is]  is 8 mm, then the area of



17. What is the length of a rectangle, if its area is 24 cm<sup>2</sup> and its perimeter equals a number between 20 cm and 30 cm?

#### Choose the correct answer.

1	If the length of a rectangle is I and its		2. Area of square = side length ×		
•	width is w, then it	ts area A =	•	(Ismailia 23)	
		[Cairo - El Shrouk 23]			
	A. A = l - W	B. A = l + w	A. itself	B. width	
	<b>C.</b> A = l × w	D. $A = l \div w$	C. 4	D. height	
3	The area of the op	posite figure equals —		6 km	
(3)	A. 24 km	<b>B</b> . 36 km		E	
	<b>C.</b> 36 km <sup>2</sup>	<b>D</b> . 24 km <sup>2</sup>		6 km	
4.	A rectangle its len	gth is 8 cm and its width i		A. C.	
				airo 24] (Giza - 6 <sup>th</sup> October 22]	
	A. 32	<b>B</b> . 12	<b>C</b> . 24	D. 64	
5.	Area of rectangle o	of length 8 cm and width ! B. 13	5 cm equals ————————————————————————————————————	cm <sup>2</sup> (El-Dakahlia 22) D. 40	
6.	A rectangle of leng	th 20 cm and width 10 cn	n, then its area equals	cm²	
			(Giza - El-Haram 22) (El-	-Monofia - Sers El-Layyan 23)	
	<b>A.</b> 2×20+2×10_	B. 20 + 10	<b>C.</b> 60	<b>D.</b> 200	
7.	A rectangle of leng	th 9 cm, width 6 cm, then	its area = cr	n <sup>2</sup> (El-Monofia – Quesna 23)	
(3)	<b>A.</b> 54	<b>B.</b> 30	<b>C</b> . 45	<b>D.</b> 15	
8.	The area of a rectar	igle with 4 cm long and 3 c	m wide equals -	- cm <sup>2</sup> [Luxor 24]	
0	<b>A.</b> 12	B. 16	<b>C.</b> 10	<b>D.</b> 20	
9.	A square whose sid	de length is 5 cm , then its	s area = cm²	[Giza 24] [Alex, 24]	
(3)	A. 21	<b>B</b> . 25	<b>C</b> . 12	<b>D.</b> 10	
10.	The area of the sou	are whose side length is	6 cm equals —	cm <sup>2</sup> [Cairo 24]	
)	A. 11	<b>B</b> . 30	C. 24	D. 36	

3

## Unikmowen Dimensions

## Learn 1

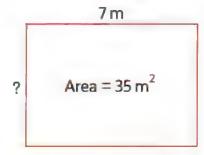
# Use the area formulas to calculate the unknown dimension

## First: The rectangle

Amal made a rectangular flower garden with an area of 35 square meters and its length is 7 meters.

How long is its width?

Use the formula to find the unknown width [w].



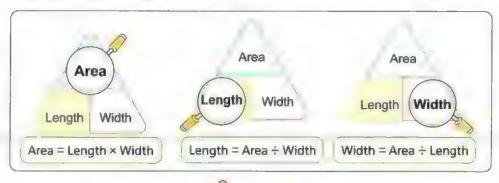
$$A = l \times w$$

$$w = A \div l$$

Area of a rectangle 
$$=$$
 length  $\times$  width

$$w = 35 \div 7 = 5 \text{ m}$$

So, the width of the garden is 5 meters.



## Second: The square

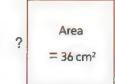
A square is of area 36 cm<sup>2</sup>.



Area of a square = side length  $\times$  side length

#### What is its side length?

Use the formula to find the unknown side length.



$$36 = s \times s$$

 $s = 6 \text{ cm} [because 6 \times 6 = 36]$ 

So, the side length is 6 cm.

#### Hint

Look for a number if multiplied by itself gives the area.

#### Notes for parents:

 In this lesson, your child will apply area and perimeter formulas to solve for an unknown dimension in a rectangle or a square.



## Learn 2

# Use the perimeter formulas to calculate the unknown dimension

## First: The rectangle

A rectangular piece of paper has a perimeter

28 cm and width 6 cm.

How long is its length?



#### Remember

- Perimeter of a rectangle =  $(2 \times length) + (2 \times width)$
- Half of perimeter = length + width = perimeter ÷ 2
- Use the formula to find the unknown length [l].

$$P = 2 \times \{l+w\}$$

- Half of perimeter =  $28 \div 2 = 14$
- Length = half of perimeter width
- Length = 14 6 = 8 cm

So, the length is 8 cm.

## Second: The square

A square is of perimeter 36 cm.

What is its side length?



#### Remember "

Perimeter of a square = side length  $\times$  4

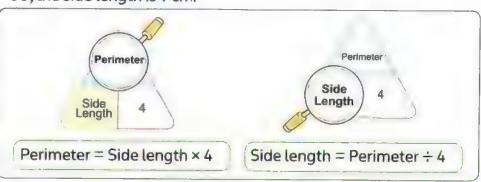
Use the formula to find the unknown side length (s).

$$P = s \times 4$$

$$36 = 5 \times 4$$

$$s = 36 \div 4 = 9 \text{ cm}$$

So, the side length is 9 cm.



?
Perimeter = 28 cm 6 cm

# Another Way Using Bar Model $P = [2 \times l] + [2 \times w]$

	Р
2×l	2×w

$$2 \times w = 2 \times 6 = 12$$

	28
2×1	12

$$2 \times l = 28 - 12$$
  $2 \times l = 16$   $l = 16 \div 2 = 8 \text{ cm}$ 



Perimeter = 36 cm





#### Conclusion

#### Conclusion

#### In a rectangle

l = length, w = width, P = perimeter, A = area

$$A = I \times w$$

$$P=2\times[l+w]$$

• 
$$l = [P \div 2] - w$$

• 
$$w = [P \div 2] - l$$

#### In a square

s = side length, P = perimeter, A = area

$$A = s \times s$$

 $P = 5 \times 4$ 

s is a number if multiplied by itself gives the area.

 $s = P \div 4$ 

## Example 1

- a. The area of a rectangle is 28 cm? If its width equals 4 cm, find its length and its perimeter.
- b. A square is of area 16 m? Find its side length and its perimeter.

## Solution [V



- a.  $A = 28 \text{ cm}^2 \text{ w} = 4 \text{ cm l} = ?$ 
  - $l = A \div w = 28 \div 4 = 7 \text{ cm}$
  - $\bullet P = 2 \times [l + w]$ 
    - $= 2 \times (7 + 4) = 2 \times 11 = 22 \text{ cm}$

#### **b.** $A = 16 \text{ m}^2 \text{ s} = ?$

- s = 4 m [because  $4 \times 4 = 16$ ]
- $\bullet P = 5 \times 4 = 4 \times 4 = 16 \text{ m}$

## Example 2

- a. The perimeter of a rectangle is 20 m. If its length equals 6 m, find its width and its area.
- b. A square is of perimeter 32 cm. Find its side length and its area.

## Solution [7]



a. P = 20 m l = 6 w = ?

$$P \div 2 = 20 \div 2 = 10 \text{ m}$$

$$\cdot w = [P \div 2] - l = 10 - 6 = 4 \text{ m}$$

•  $A = 1 \times w = 6 \times 4 = 24 \text{ m}^2$ 

- **b.** P = 32 cm s = ?
  - $s = P \div 4 = 32 \div 4 = 8 \text{ cm}$
  - $A = s \times s = 8 \times 8 = 64 \text{ cm}^2$

## Pharm.

#### your understanding

- 1. If the area of a rectangle is 35 cm<sup>2</sup> and its length equals 7 cm, find its width.
- 2. A square is of area 25 cm<sup>2</sup>, find its side length and its perimeter.
- 3. If the perimeter of a rectangle is 18 cm and its width equals 3 cm, find its length and its area.
- 4. A square is of perimeter 40m. Find its side length.

#### Notes for parents:

• Revise with your child time table 4. Practise him/her how he/she can divide by 4.

## **Exercise**

#### on lesson 3

## Ulikanian Dimensions

REMEMBER

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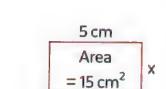
O APPLY



From the school book

1. Find the unknown side length based on the area given of each rectangle.

a.

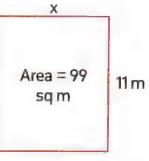


[Alex, 24]



10 units Area = 50X sq units

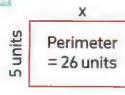
C.

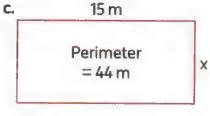


2. Find the unknown side length based on the perimeter given of each rectangle.

a.

b. 📖



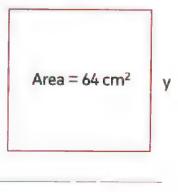


3. Find the unknown side length based on the area given of each square.

a.

b.

C.



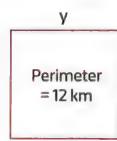
#### 4. Find the unknown side length based on the perimeter given of each square.

a.

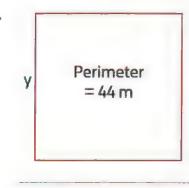


[Alex. 24]

b.



C.



#### Complete each of the following.

a. If the perimeter of a square is 20 cm, then its side length is -

(El-Behiera – Hosh Essa 23)

- **b.** A square its perimeter equals 24 cm, then the side length = \_\_\_\_ cm [Kafr El-Sheikh 24]
- c. The length of the side of a square whose perimeter is 28 cm is ——— cm [Giza Awseem 23]
- d. The side length of a square with perimeter 40 cm is [El-Beheira 23]
- e. The perimeter of a square is 36 cm, then the length of its side is \_\_\_\_\_ cm [Aswan Kom Ombo 22]
- f. A square its area is 25 m<sup>2</sup>, then its side length is cm [El-Menia 24]
- g. A square is of area 49 km<sup>2</sup>, then its side length is -

h. A square has an area of 16 square centimeters, then its perimeter is - cm

[Cairo - El-Kobba 22]

i. A square its perimeter is 12 cm, then its area is ———— cm<sup>2</sup>

[Alex. 24]

j. If the area of a rectangle is 30 cm<sup>2</sup> and its length is 6 cm, then its width is

cm

[Giza 24]

k. The area of a rectangle is 42 km<sup>2</sup>, and its width is 6 km, then its length is -

l. The area of a rectangle is 45 m<sup>2</sup>, and its length is 9 m, then its perimeter is –

m. If the perimeter of a rectangle is 26 cm, and its width is 4 cm, then its length is

n. A rectangle of perimeter 32 m, and its length is 9 m, then its area is -

#### 6. Complete the following table of rectangles.

Length	Width	Area	Perimeter
a. 5 cm	10 cm		
b. ———	5 m	10 m <sup>2</sup>	
<b>c.</b> 9 km		72 km²	-
<b>d.</b> 6 dm			22 dm
e	2 mm		18 mm

7. Complete the following table of squares.

Side length	Area	Perimeter
a. 9 m		
b	64 cm <sup>2</sup>	
с. ———		24 mm

8.	Ali sketched a rectangular painting with an area of 28 cm <sup>2</sup> , the width of his painting is 4 cr Find its perimeter.
9.	Tahani is building a square picture frame for her father. The picture she has to frame has an area of 49 square centimeters. What is the width and the length of her frame?
0.	Emad is building a rectangular garden with 26 m of fencing.  What is the length and the area of it if its width is 6 m?
1.	Mai walked once around the squared playground. She covered a distance of 40 m.  What is the area of this playground?
2.	A rectangle is 6 meters wide. The length is 2 meters more than its width. What is the area and perimeter of the rectangle?

## Challenge

-	Mathew has two pictures, both with an area of 36 cm <sup>2</sup> . One is a rectangle with length 9 cm,
	and the other is a square. Which has the greater perimeter?

## Multiple Choice Questions

#### Choose the correct answer.

1. Length of a rectangle =			2. If the area of a rectangle is 35 cm <sup>2</sup> and			35 cm² and its
•		length is 7 cm ,			hen its wi	dth =
				[Beni Suef 24] [El-Menia 23		
	A. Area ÷ length	B. Area ÷ width	A. 40	cm	В.	5 cm
	<b>C</b> . Length × width	D. Area × width	C. 60	cm	D.	7 cm
3.	If the area of rectangl	le is 48 cm² and its	4. Asqu	are whose	area is 36	km², then its
•	width is 6 cm, then its	slength	side l	ength is —	kr	n
	=cm	(Ismailia 24)			[Alex	- First Montaza 23
	A. 42	B. 8	A. 4		B.	5
	<b>C.</b> 18	<b>D</b> . 288	C. 6		D.	9
5.	The side length of a square whose		6. The p	erimeter o	f a square	is 40 cm, then
<u></u>	perimeter is 28 cm is-	cm (Souhag 23)	its sid	le length =		- cm (Cairo 23)
	A. 7	B. 14	A. 4		B.	1,600
	<b>C.</b> 5	D. 4	<b>C.</b> 16	0	D.	10
7.	A rectangle with perio	meter 22 cm and	8. The va	alue of y is		У
()	its width = 4 cm, ther	n its lentgh =	A. 40	cm		,
		(Giza 24)	B. 60	cm		
	<b>A.</b> 4 cm	<b>B.</b> 8 cm	C. 10 cm	cm	Α	$rea = 16 cm^2$
	<b>C.</b> 7 cm	<b>D.</b> 18 cm	D. 80	cm		
9.	A rectangle with area	15 cm <sup>2</sup> and	<b>10.</b> A squ	are with ar	ea 1 m²	
0	width 3 cm. What is it		What	is its perim	neter?	
	<b>A</b> . 8 cm	<b>B.</b> 15 cm	<b>A.</b> 1n	·		2m
	<b>C.</b> 16 cm	<b>D.</b> 16 cm <sup>2</sup>	<b>C.</b> 3 r	n	D.	4 m

11. Nahed wants to put a ribbon border around a blanket she is making. The width of the blanket is 3 meters. The perimeter of the blanket is 14 meters. How long is the length of the blanket?

(Alexandria - Borg El-Arab 22)

A. 17 meters

B. 11 meters

C. 8 meters

D. 4 meters



## Complex Shapes



## Learn

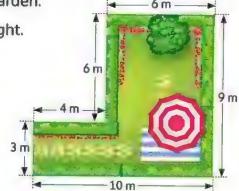
How to find perimeter and area of complex figures ?

Andy wants to put a fence around his garden.

The space he will use is shown at the right.

How much fence should he buy?

What is the area of his garden?



## Find the perimeter

Add the lengths of the sides.

Perimeter = 10 + 3 + 4 + 6 + 6 + 9 = 38 m

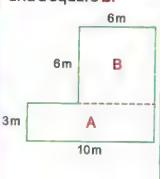
He should buy 38 meters of fence.

## Find the area

There are many ways to calculate the area.

#### Step 1

Separate the figure into a rectangle A and a square B.



#### Step 2

Calculate the area of each figure.

Area of the rectangle A

$$= 10 \times 3$$

Area of the square B

$$A = s \times s$$

$$= 6 \times 6 = 36 \text{ sq m}$$

#### Step 3

Add both areas to find the area of the whole figure.

$$30 + 36 = 66 \text{ sq m}$$

The area of the garden is 66 square meters.

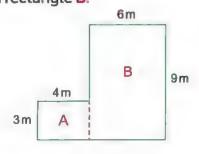
#### Notes for parents:

 In this lesson, your child will learn and apply strategies for calculating the area and perimeter of complex shapes. Your child will use a variety of strategies to break shapes down into squares and rectangles to calculate their measurements.

#### Another Way to find area

#### Step 1

Separate the figure into a rectangle A and a rectangle B.



#### Step 2

Calculate the area of each figure.

#### Area of the rectangle A

Area =  $l \times w$ 

 $= 4 \times 3 = 12 \text{ sq m}$ 

#### Area of the rectangle B

Area =  $1 \times w$ =  $9 \times 6 = 54 \text{ sq m}$ 

#### Step 3

Add both areas to find the area of the whole figure.

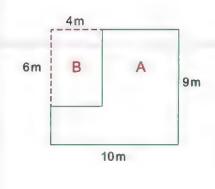
$$12 + 54 = 66 \text{ sq m}$$

The area of the garden is 66 square meters.

## Another Way to find area

#### Step 1

Complete the figure as a big rectangle A and a small rectangle B.



#### Step 2

Calculate the area of each figure.

#### Area of the rectangle A

 $A = l \times w$   $= 10 \times 9 = 90 \text{ sq m}$ 

#### Area of the rectangle B

 $A = l \times w$ 

 $= 6 \times 4 = 24 \text{ sq m}$ 

#### Step 3

Subtract both areas to find the area of the required figure.

90 - 24 = 66 sq m

The area of the garden is 66 square meters.

#### Note

The area of a complex figure does not change when divided in different ways.



#### Notes for parents:

 Make sure that your child understand the area of a complex figure does not change when he/she calculate in different ways.

X

## Example 1

#### Calculate the perimeter and area of the figure.

## Solution [7]



First you should find the length of the unknown sides x and y

$$x = 23 - 13 = 10 \text{ m}$$

$$y = 18 - 6 = 12 \text{ m}$$

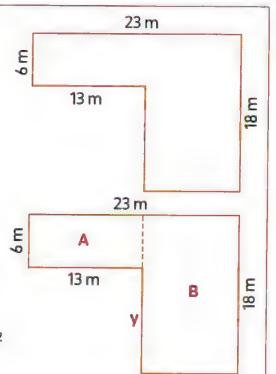
The perimeter = 
$$23 + 18 + 10 + 12 + 13 + 6 = 82 \text{ m}$$

The area = Area of section A + Area of section B

$$= (13 \times 6) + (18 \times 10)$$

$$= (10 + 3) \times 6 + 180$$

$$= (10 \times 6) + (3 \times 6) + 180 = 60 + 18 + 180 = 258 \text{ m}^2$$



## Example 2 -

Combine these two simple shapes to form a complex shape.

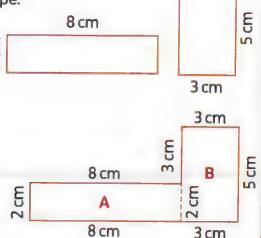
Sketch your shape, labeling the sides.

Then calculate the perimeter and the area of the complex shape.

## Solution [V]



- The perimeter = 8 + 3 + 3 + 5 + 3 + 8 + 2 = 32 cm
- The area = Area of section A + Area of section B  $= [8 \times 2] + [5 \times 3] = 16 + 15 = 31 \text{ cm}^2$





## your understanding

Find the perimeter and the area of the complex figure.

9 m Ε 7 m X Sm

 When forming a complex shape out of simple shapes, the perimeter of this complex shape may be equal different results according to how you form this complex shape, but the area of the complex shape does not change.

# Exercise on lesson 4

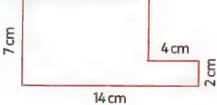
## Compolite, Smallores

• UNDERSTAND PROBLEM SOLVING From the school book REMEMBER 1. Calculate the area and the perimeter of each complex shape. Show your work. b. 🕮 C. 🔙 a. 24 m 7 m em9 1m 18 m 13 m 3 m 3 cm 3 m 1cm f. d. == e. 📖 5 cm 4 cm 1m 3 cm 4 cm 4 m 10 m 12 cm [Kafr El-Sheikh 24] 2. Find the area of the opposite figure. [El-Beheira 24] 8 cm 4 cm 5 cm 3. Find the area of the opposite figure. [Alex. - Al-Agamy 23] 2 cm 4 cm 6 cm 5 cm 6 cm 4. Find the area and perimeter. (Ismailia 23) 11 cm 3 cm Challenge 12 cm 5. Combine these two simple shapes into a complex shape. 7 cm 10 cm Sketch your shape, labeling the sides. Then, calculate the area and perimeter for the complex shape. 3 cm

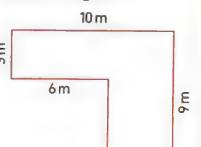
# Multiple Choice Questions

#### Choose the correct answer.

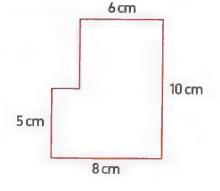
- 1. What is the perimeter of the figure?
  - A. 10 cm
  - B. 12 cm
  - **C.** 13 cm
  - **D**. 15 cm
- 1cm 3cm 1cm
- 2. What is the area of the figure?
  - A. 24 cm<sup>2</sup> B. 42 cm<sup>2</sup>
  - **C.** 78 cm<sup>2</sup>
  - **D.** 87 cm<sup>2</sup>



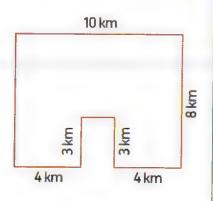
- 3. What is the area of the figure?
  - A. 54 m<sup>2</sup>
  - **B**. 32 m<sup>2</sup>
  - C. 32 cm<sup>2</sup>
  - D. 54 cm<sup>2</sup>



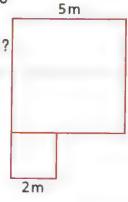
- 4. What is the perimeter of the figure?
  - A. 70 m
  - B. 36 m
  - C. 36 cm
  - **D.** 70 cm



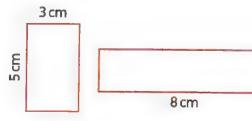
- 5. What is the area of the figure?
  - **A.** 74 m<sup>2</sup>
  - **B.** 42 km
  - C. 42 m
  - **D.** 74 km<sup>2</sup>



- Two squares are joined to make a figure. What is the perimeter of the figure?
  - A. 7 m
  - **B.** 10 m
  - C. 24 m
  - **D.** 35 m

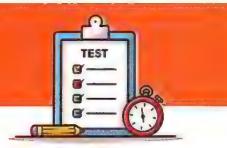


- 7. If you combine the two rectangles to make a complex figure, what is the area of the resulted figure?
  - **A.** 18 cm<sup>2</sup>
  - **B**. 31 cm<sup>2</sup>
  - **C.** 36 cm<sup>2</sup>
  - **D.**  $40 \text{ cm}^2$



2cm

## **Unit Four Assessment**



#### Choose the correct answer.

1. The perimeter of the square = — where s is its side length. [Port Said 24]

- A. 5×4
- B. s×s
- C. s×3
- D. 5 + 4
- 2. A rectangle its length is (l) and its width is (w), what is its perimeter? [Giza Awseem 23]

- A. l+w
- B. L×w
- C.  $2 \times [l+w]$
- D.  $[2 \times l] + w$
- 3. A square of side length 2 cm, its perimeter = \_\_\_\_ cm

- [Alex. 24]

B. 6

C. 4

- 4. The perimeter of rectangle whose length is 8 cm and width is 4 cm equals —

[El-Monofia 24]

[El-Monofia 24]

A. 2

B. 12

C. 24

- **D.** 35
- 5. A rectangle is of width 3 cm and its length is 5 cm, then its area equals — cm<sup>2</sup>

A. 16

B. 20

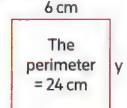
**C**. 15

**D.** 35

6. In the opposite figure:

The value of y is -

- **A.** 4 cm
- **B.** 5 cm
- C. 6 cm
- D. 7 cm

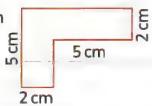


- 7. The perimeter of the opposite complex figure equals
  - A. 14

B. 21

C. 19

D. 24



#### 2. Complete the following.

- 1. A rectangle of length 7 cm and width 4 cm, then its perimeter = \_\_\_\_ cm [Beni Suef 24]
- 2. A square of side length 7 m, then its area = \_\_\_\_ m<sup>2</sup>
- 3. The side length of a square = its perimeter ÷
- 4. The perimeter of the rectangle = ——— + —
- 5. A square of side length 5 units, then its perimeter = \_\_\_\_ units [Cairo 23]
- 6. The area of the rectangle with 3 cm wide and 9 cm long equals ———— cm<sup>2</sup>

7	If the area of the o	pposite figure equals 25	5 m <sup>2</sup> , then			X
C	the value of x is —	m				×
					3 m	
8	. The area of the op	posite			3	
	figure equals ——	m²			m	8
. c	hoose the correct a	nswer.				
1.	The area of a rectar	ngle whose length is 7 o	m and its w	idth is 5 cm	equals —	cm <sup>2</sup>
<b>(3)</b>	A. 12	B. 24				(Souhag 23
2	. The perimeter of the	e square whose side leng				
<u></u>	A. 8	B. 12		-		
3.	A rectangle its lend	gth is 8 cm and its widtl				cm
	A. 20	<b>B</b> . 16	C. 10			(El-Behiera 23
4	In the opposite fig	ure: The value of × is —		X	7	in actuals ra
<b>(3)</b>	A. 80	B. 2	QIII.	The area	5	
	C. 6	D. 5		$= 20 \text{ cm}^2$	4 cm	
5.		oosite figure equals —	cm <sup>2</sup>			
	<b>A.</b> 30	<b>B.</b> 50		The area = 40	Cm2 T	he area
	<b>C.</b> 400	<b>D</b> . 100		THE alea - 40	-	10 cm <sup>2</sup>
6.	Area of square = si	de length × ———				
•	A. length	B. width	C. itself		D. 4	
7.	Area of rectangle ed	quals			1	El-Monofia 24]
•		B. $2 \times [l + w]$	C. l×w		D. l+w	
Δr	swer the following.				_	
	-			4 n	n	
). ()	Find the area of the	opposite figure.	-			
_				m	-	El-Monofia 24]
2.	Find the perimeter	and the area of a square	e whose side	e length is 7	m	[Giza 24]
3.		es have the same area.				
	Find the length of the	he second rectangle.	6 cn	1		X
	-			8		
				m		
1.	Wael wants to place a wooden fence around his vegetable garden.					
0			id nis vegeta	ible garden.		
	Each meter of fencion	=				7 E
	Find the cost of the	new fence.				
						2
				_	-	<b>6</b> m
			_			9 m



# CONCEPT

# Multiplicative Comparisons



#### ▶ Lesson 1

**Multiplicative Comparison** 

#### **Learning Objectives:**

- Students will define multiplicative comparison.
- Students will model multiplicative comparison problems.

#### ▶ Lessons 2&3

Creating Multiplicative Comparison Equations Solving Multiplicative Comparison Equations

#### **Learning Objectives:**

- Students will create equations to represent multiplicative comparison problems.
- Students will use letters to represent unknown quantities in equations.
- Students will create and solve multiplicative comparison equations.

#### **Fast Fact**

An adult grasshopper can jump 10 times its length straight into the air and 20 times its length horizontally without using its wings. That is, if a grasshopper is 5 centimeters long, it can jump a distance of 1 meter.

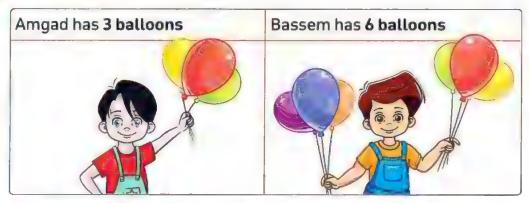
## **Multiplicative Comparison**



## What is multiplicative comparison?

Multiplicative comparison means comparing two things or sets that need multiplication.

For Example: In a birthday party,



You can use multiplication as a way to compare between what they have as follows:

Tape diagram	Multiplicative comparison statement	Multiplication equation
Amgad: 3 balloons  Bassem: 3 balloons 3 balloons	Bassem has <b>twice</b> as many balloons as Amgad has.  Or 6 is <b>two times</b> the number 3	6=2×3



#### Remember ----

Multiplication is repeated addition.

So, you can rewrite a multiplication equation as repeated addition equation.

Hint

 $6 = 2 \times 3$  means

6 is two times the number 3

Or 6 is three times the number 2 2 2 2

#### Notes for parents:

 Make sure your child understands that the "tapes" in the tape diagram represent equal groups. When constructing a tape diagram, each tape should represent the same quantity.



## Example 1

Complete the multiplicative comparison statements. Use tape diagram or multiplication facts to compare.

- a. Compare 15 and 5. 15 is times the number 5.
- b. Compare 50 and 10. 50 is \_\_\_\_\_ times the number 10.

## Solution [7]

a. 
$$3(think: 5|5|5|,15=3\times5)$$

a. 
$$3 \text{ (think : } 5 | 5 | 5 | , 15 = 3 \times 5)$$
 b.  $5 \text{ (think : } 10 | 10 | 10 | 10 | 10 | , 50 = 5 \times 10)$ 

## Example 2 —————

Rewrite each equation using multiplication.

a. 
$$5+5+5=15$$

**b.** 
$$3+3+3+3+3+3+3=21$$

a. 
$$3 \times 5 = 15$$

**b.** 
$$7 \times 3 = 21$$

## Example 3

Fill in the blanks to complete the multiplicative comparison statement for each tape diagram.

— Is ——— times the number 5.

## Solution [V

a. 48 is 6 times the number 8.

b. 40 is 8 times the number 5.



### your understanding

Complete the table. Write a comparison statement or a multiplication equation.

Comparison Statement	Multiplication Equation
1 days is 3 times as many as 7 days	
	36 = 9 × 4
30 fish is 5 times as many as 6 fish.	

Children often confuse multiplicative comparison with additive comparison. For example, instead of multiplying by 4 to find a number 4 times the number 20, they might add 4.

## **Exercise**

# 21

#### on lesson 1

## Multiplicative Comportson

REMEMBER

UNDERSTAND

() APPPLY

PROBLEM SOLVING

From the school book

#### 1. Complete each of the following.

[Alex. 23]

(Giza 24)

[Cairo 24]

#### 2. Rewrite each equation using multiplication.

[Giza 24]

(Ismaillia 23)

#### 3. Use tape diagram or multiplication facts to compare the numbers.

15 is ———times the number 3.

28 is \_\_\_\_\_ times the number 7.

27 is — times the number 9.

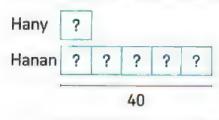
10 is \_\_\_\_\_ times the number 2.

	Offic 5   Concept 1
e. (L.) Compare 12 and 3. 12 is	times the number 3.
f. (L) Compare 18 and 6. 18 is	times the number 6.
g. Compare 24 and 6. 24 is	times the number 6.
h. Compare 35 and 7. 35 is	times the number 7.
i. 45 equals 5 times ————	(El-Menia 24)
j. 18 is 6 times as many as	[Cairo 24]
k. The number ——— is 7 times	as many as number 8. [Alex. 24]
L. The number 36 is 4 times as many	as the number — [Alex. 24]
m. The number 36 is 9 times as man	y as the number — [Alex. 24]
n. 28 is ——— times the number	er 7 (El-Monofia - Sadat City 23)
o. 12 is 6 times the number —	
Fill in the blanks to complete the mudiagram.	altiplicative comparison statement for each tape
a. 5 5 5 5	<b>b.</b> 8 8 8
istimes the numb	er 5 is times the number 8.
c. 3 3 3 3 3 3 3 3	d. 6 6 6 6 6 6 6
is times the numb	er 3istimes the number A

# Challenge

5. Hanan has 40 photos. She has 5 times asmany photos as Hany.

How many photos does Hany have?





# Multiple Choice Questions

#### Choose the correct answer.

1. 5+5+5=!	[Alex. 24]		s of number <mark>9 (Ismailia</mark> 24)
A. 3	<b>B</b> . 24	<b>A.</b> 3	<b>B</b> . 18
<b>C.</b> 30	<b>D.</b> 8	C. 4	<b>D</b> . 243
<b>3.</b> 45 is ——	times the number 5. [El-Menia 24] [Giza 23] (Sharkia 22)	4. 56 is — time	es the number 7 [El-Monofia 24]
A. 9	<b>B</b> . 6	<b>A</b> . 5	<b>B</b> . 6
<b>C.</b> 5	<b>D.</b> 40	<b>C.</b> 7	<b>D.</b> 8
5. The number	equals 6 times 4.	6. The number 40 e	quals 5 times the [El-Monofia 24] (Souhag 23)
A. 10	B. 2	A. 4	<b>B.</b> 5
<b>C</b> . 24	D. 12	C. 6	D. 8
7. The number	42 is 6 times the number—		uals 3 times the number
	[Alex. 24] [Giza 23]	<b>A</b> . 4	(El-Menia 23) <b>B.</b> 5
A. 7 C. 8	B. 9 D. 5	C. 6	D. 7
	6 times the number ———	10. 3 times the numb	
A. 2	[Aswan 23]		I-Menia 24) (El-Monofia 24)
C. 6	<b>B</b> . 3 <b>D</b> . 9	A. 7 C. 21	B. 14 D. 28
11. 5 times the r		12. 10 times the num	
<b>A</b> . 10	<b>B</b> . 15	<b>A.</b> 430	<b>B.</b> 4,300
<b>C</b> . 20	<b>D</b> . 25	<b>C.</b> 43,00	<b>D.</b> 430,000
for 7 7 7	cative comparison statement  is 3 times the number 7  [El-Monofia 24]	14. The multiplication 5+5+5+5=20	is
<b>A.</b> 37	<b>B</b> . 21	<b>A.</b> $2 \times 10 = 20$ <b>C.</b> $20 \times 1 = 20$	<b>B.</b> $4 \times 5 = 20$ <b>D.</b> $10 + 10 = 20$

D. 14

C. 24

- Creating Multiplicative Comparison Equations
- Solving Multiplicative Comparison Equations

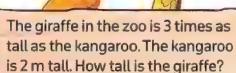
#### Learn

During Emad's visit to the Zoo, he read this information.

Can you help him to calculate the tall of the giraffe?

#### Read and Understand

What do you know?



- The kangaroo is 2 m tall.
- The giraffe is 3 time as tall as the kangaroo

Find how tall is the giraffe.



What are you trying to find?

What strategy will you use?

Strategy: Write a multiplicative comparison equation

- Use a letter to represent the unknown.
   Let the tall of the giraffe be x.
- The giraffe is 3 times as tall as the kangaroo means,x is 3 times 2

Kangaroo's tall

Giraffe's tall

2m 2m 2m

Comparison bar model

- 3. Write an equation:  $x = 3 \times 2$
- 4. Solve the equation: x = 6

So, the giraffe is 6 m tall.

#### Notes for parents:

• Common Error : Your child may incorrectly place the unknown in an equation. For example, if your child is asked to write 12 is 3 times the number a, he/she may write  $12 \times 3 = a$ , instead of  $12 = 3 \times a$  or  $3 \times a = 12$ 



## Example 1

Write an equation based on the comparison statement.

Use a letter to represent the unknown.

- a. 3 times the number 5 is
- b. 12 is 6 times as many as

## Solution [7]

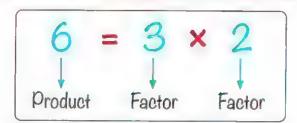


$$\mathbf{a}$$
.  $3 \times 5 = \mathbf{a}$ 

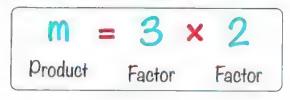
**b.** 
$$12 = 6 \times m$$

## How to solve multiplication comparison equation?

You know that



- Solving an equation means to find the value of the unknown that makes the equation true.
- 1. If the unknown is the product, use multiplication.



Multiply: m = 6

2. If the unknown is one of the two factors, use division.



Divide:  $\mathbf{m} = 6 \div 2 = 3$ 

## Example 2

Write an equation for each of the following comparisons and then solve it.

- a. What number is 3 times the number 7?
- b. 24 is 4 times a number. What is this number?
- c. 12 is 3 times a number. What is this number?

#### Notes for parents:

• It is important to note that the unknown can be in different positions in the equation. Explain that to solve an equation, you find what the unknown number is.

## Solution [V

a. Equation:  $3 \times 7 = m$ 

Answer: m = 21

The number is 21

b. Equation:  $24 = 4 \times h$ 

**Answer:**  $h = 24 \div 4 = 6$ 

The number is 6

c. Equation:  $12 = 3 \times a$ 

**Answer**:  $a = 12 \div 3 = 4$ 

The number is 4

## Example 3

Write an equation for the following comparison and then solve.

Wael ate 5 figs in the evening. His older brother ate 4 times as Wael ate.

How many figs did his brother eat?

## Solution [V]



Let the number of figs of his brother be a.

• Equation:  $a = 4 \times 5$ 

Answer: a = 20

His brother ate 20 figs.



## Example 4

There were thirty-five adults in line at a movie theater. That is seven times the number of children in another line. How many children were in this line?

Solution [7]



Let the number of children be n. Then, 35 equals 7 times n

- Equation:  $35 = 7 \times n$
- Use division to solve:  $n = 35 \div 7 = 5$

So, the number of children in the line is 5 children.





your understanding

1. Solve each of the following equations.

a.  $x=3\times6$ 

b.  $14 = 7 \times n$ 

c.  $6 \times y = 24$ 

2. Write an equation to represent the situation below, and then solve.

Farmer Wael has 20 sheep. He has twice the number of sheep as farmer Sameh.

What is the number of sheep of farmer Sameh?

<sup>·</sup> Explain that the missing number in an equation is represented by a blank, but we can use letters to represent missing numbers.

# Exercise on lessons 2&3

## Creating Multiplicative Comparison Equations

Solving Multiplicative Comparison Equations

	111	un	i i	20	TA	M	n
1	VI	10	-1	1	111	11	U

O APPLY

**PROBLEM SOLVING** 

From the school book

1.	Write an equation	based on the comparison statement. Use a letter	to represent the
0	unknown number.	You do not have to solve the equations.	

a.	7	times th	e number 2 is	5
a.	1	แบบขอ เก	e number z i:	5



### 2. Solve each of the following.

**a.** 
$$y = 5 \times 10$$

**b.** 
$$a \times 3 = 15$$

c. 
$$7 \times b = 21$$

d. 
$$3 \times 4 = x$$

**e.** 
$$5 \times b = 50$$

f. 
$$m \times 4 = 16$$

g. 
$$z=5\times1$$

**h.** 
$$n \times 2 = 18$$

i. 
$$5 \times k = 35$$

- 3. Write an equation for the comparisons. Use a letter to represent the unknown number. You do not have to solve the equations.
  - a. (1) Nadia collected 5 marbles in March. By May she had 4 times as many marbles. How many marbles does Nadia have in May?



**b.** When Hamed had 12 cookies, which was 3 times as many cookies as his brother Ahmed. How many cookies did Ahmed have?



c. It took Aida 21 minutes to walk to school on Monday.
On Tuesday, it took her 7 minutes to ride her bike to school.
How many times as many was riding her bike as walking?



d. Menna ran around the soccer field 4 times. Aya ran around the field twice as many times as Menna. How many times did Aya run around the field?



e. Rana has 6 mangoes. Her brother Sherif has 18.
How many times of mangoes does Sherif have?



f. A restaurant sold eight times as many salads as they sold steaks. If they sold four steaks, how many salads did they sell?



g. A pet store sold two cats. They sold six times as many dogs as they sold cats. How many dogs did they sell?



- 4. Write an equation for each of the following comparisons, and then solve it.
  - a. What number is 5 times the number 6?
  - b. 36 is 4 times a number. What is this number?
  - c. Ayman ate 4 figs in the morning. His older brother ate 3 times as many. How many figs did his brother eat? [Giza - 6<sup>th</sup> October 22]



d. Mona sent twenty-five text messages a day. Esslam sent five a day. How many times as many texts did Mona send than Esslam sent?



e. It takes Wael six oranges to make a small glass of orange juice. He uses eight times as many for a large glass. How many oranges does he use for a large glass?



f. Nora had four times as many Pounds as her sister. Her sister has three Pounds. How much money does Nora have?









How Many Seats? Use the information in the table to compare numbers of seats in different modes of transportation. Then, enter and solve an equation for each comparison.

Means of Transportation	Number of Seats
Bike	1
Motorcycle	2
Car	4
Truck	6
Bus	36
Metro Train	48

a. How many times as many seats are in a truck	k than on a motorbike ?
Equation:	Answer:
<b>b.</b> How many times as many seats are on a bus	than in a truck?
Equation:	Answer:
c. How many times as many seats are on the m	etro train than in a car?
Equation:	Answer:
d. A metro train can fit how many times as man	y people as a truck?
Equation:	Answer:
e. A bus has how many times as many seats as	a car?
Equation:	Answer:

## Challenge

6. Bassem sold 9 chocolate bars. Marwan sold three times as many as Bassem. Esslam sold 9 fewer than Marwan. How many bars did Esslam sell?

## Multiple Choice Questions

#### Choose the correct answer.

1. If 
$$n \times 3 = 18$$
, then  $n =$  [Cairo 24]

2. If 
$$6 \times b = 42$$
, then  $b = ____ [Beni Suef 24]$ 

3. If 
$$8 \times M = 40$$
, then  $M = _____$  [Giza 24]

- 5. What number is 10 times the number 13?
- 6. There are 4 bicycles on a road, and 14 times as many cars as bicycles. How many cars are on the road? (Suez 22)

- A. 130
- B. 3

- A. 46
- B. 14

- C. 23
- **D.** 1,300

- C. 56
- D. 18

7. The equation based on the comparison statement «3 times the number 7»

- $A. 3 \times 7 = A$
- B. 7 3 = A
- C. 3+7=A
- **D.**  $7 \div 3 = A$
- 8. The equation based on the comparison statement «45 is a times the number 9»
  - A. 45 = 9 a
- **B.**  $45 = a \times 9$
- C. 45 = a + 9
- D. 45 = 9 a

- 9. There were 24 adults and 3 children in line at a movie theater. How many times the adults were in the line as the children?
- 10. Noha sent 18 text messages a day. Ali
  - sent 3 a day. How many times as many texts did Noha send as Ali?

- A. 28 C. 7
- **B.** 36 D. 8

A. 5 **C**. 3

- B. 4 D. 6
- 11. Hanan has 5 L.E., and Mohamed has 50 L.E., then the money with Mohamed =
  - times the money with Hanan.

(Cairo - El-Salam 23)

A. 3

B. 10

- C. 300
- **D.** 3,000
- 12. Hany is twice as old as his brother. His brother is 8 years old. Which equation can be used to find Hany's age?

**A.** 
$$2+a=8$$

**B.** 
$$2 \times a = 8$$

**C.** 
$$2 \times 8 = a$$

D. 
$$8 + 2 = a$$

# CONCEPT 2

# Properties and Patterns of Multiplication



#### Lessons 485

Commutative Property of Multiplication Identity Property and the Zero Property

#### Learning Objectives:

- Students will explain the Commutative Property of Multiplication.
- Students will apply the Commutative Property of Multiplication to solve problems.
- Students will apply the Identity Property of Multiplication to solve problems.
- Students will apply the Zero Property of Multiplication to solve problems.
- Students will identify patterns that occur when multiplying by 10,100, and 1,000.

#### ▶ Lessons 6&7

Associative Property of Multiplication
Applying Patterns in Multiplication

#### Learning Objectives:

- Students will explain the Associative Property of Multiplication.
- Students will apply the Associative Property of Multiplication to solve problems.
- Students will apply decomposing and the Associative Property of Multiplication to solve equations with multiples of 10, 100, or 1,000.

#### Fast Fact

The fastest man in the world is Usain Bolt. He can run about 44 kilometers per hour for short distances. One of the fastest cars in the world in 2017 was driven to an average speed 10 times faster than Usain Bolt.

How fast can this car move?

## Lessons

# 4&5

- Commutative Property of Multiplication
- Identity Property and the Zero Property



## **Learn 1** Multiplication properties

Multiplication properties are rules for multiplication that are always true. In this lesson, you will learn three properties of multiplication.

- Commutative Property.
- Identity Property.
- Zero Property.

## 1 Commutative Property of Multiplication

Natalie knit 3 scarves. She used 2 balls of yarn for each scarf.

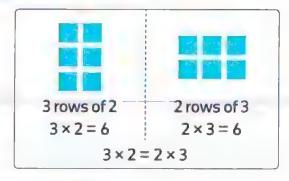
How many balls of yarn did she use in all?

You can use multiplication properties to help you find products.



#### Multiply 3 × 2

Commutative Property states that when you multiply two factors in any order the product is the same.



So, Natalie used 6 balls of yarn.

#### 2 Identity Property of Multiplication

The Identity Property states that the product of 1 and any number equals that number.

#### For Example:

$$*3 \times 1 = 3$$

$$\cdot 1 \times 27 = 27$$

$$•548 \times 1 = 548$$

### **3** Zero Property of Multiplication

The Zero Property states that the product of zero and any number equals 0.

#### For Example:

$$-4 \times 0 = 0$$

• 
$$0 \times 13 = 0$$

$$\cdot 217 \times 0 = 0$$

#### Notes for parents:

Using multiplication properties makes finding products easier.

## Example 1

#### Complete each of the following.

c. ———
$$\times 5 = 5 \times 9$$

## Solution [V]

a. 8

e. 15

- b. 7
- f. 0

- c. 9
- q. 0

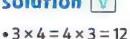
- d. 2
- h. 1

## Example 2

#### Mr. Hany has 12 pens.

Write an equation using the Commutative Property of Multiplication to describe two ways he can arrange his pens.

## Solution [V]



$$\cdot 2 \times 6 = 6 \times 2 = 12$$





## your understanding

#### Find the missing number. Name the property you used.

- b.  $9 \times 1 = 0$
- c.  $5 \times 6 = \times 5$
- **d.**  $= \times 500 = 0$
- e. 1×==708
- f.  $2 \times = 10 \times 2$



- · You may wish to ask your child questions such as the following as you observe your child at work:
  - When you multiply by 1, which number is the product?
- When you multiply any number by 0, which number is the product?

#### Learn 2 Multiplying by 10, 100 and 1,000

You can use a basic fact and a pattern to find the product.

TH	Н	Т	0
			4
		4	0
	4	0	0
4 ,	0	0	0

$$4 \times 1 = 4$$

[Think: Use the basic fact  $4 \times 1 = 4$ ]

$$4 \times 10 = 40$$

[Put 1 zero at the end]

$$4 \times 100 = 400$$

 $4 \times 100 = 400$  [Put 2 zeroes at the end]

$$4 \times 1,000 = 4,00$$

 $4 \times 1,000 = 4,000$  [Put 3 zeroes at the end]

Notice the pattern of zeroes.

## Example 3

Fill in the blanks below.

## Solution [V]



d. 210

g. 10

**b.** 200

e. 500

h. 10

**c.** 7,000

f. 8,000

i. 50

## divection your understanding

#### Complete each of the following.

**c.**  $30 \times 10 = -$ 

#### Notes for parents:

Let your child discover the pattern of zeroes when he/she multiply by 10, 100 and 1,000.

# Exercise

on lessons 4&5

- Commutative Property of Multiplication
- Identity Property and the Zero Property

	ь.	KU I	Lane	ш	Е	к

From the school book

## 1. Apply the Commutative Property of Multiplication to complete each equation.

c. 
$$25 \times 52 = 52 \times$$
 [Matrouh 22]

g. If 
$$34 \times B = 15 \times 34$$
, then  $B = -$ 

**d.** 
$$48 \times 12 = 12 \times$$
 [Souhag 22]

## 2. Apply the Commutative Property of Multiplication to find the unknown value.

g. 
$$16 \times k = 11 \times 16$$

**b.** 
$$b \times 9 = 9 \times 8$$

d. 
$$5 \times 9 = 9 \times b$$

f. 
$$5 \times 93 = b \times 5$$

**h.** 
$$3 \times m = 100 \times 3$$

#### 3. Solve each of the following.

f. 
$$\square$$
 758  $\times$  0

#### 4. Complete each of the following.

i. 
$$123 \times 100 =$$
 [Giza 23]

#### **Story Problems**

- 5. 🔱 There are 42 people who want to play football. Badr says that you can make 6 teams with 7 people on each team. Salma says you can make 7 teams with 6 people on each team. Who is correct? Use numbers, words, and pictures to explain your thinking.
- 6. Mr. Saleh has 24 beans. Write an equation using the commutative property of multiplication to describe two ways he can arrange his beans.
- 7. Bassem has 20 apples. Write an equation using the commutative property of multiplication to describe two ways he can arrange the apples.



8. Ahmed has 48 toy cars and wants to display them in his room. He wants to arrange them in equal rows and equal columns. How can he display his cars? Draw your solution.



9. Writing About Math Tarek says that 9 × 1,000 equals 900. What would you tell Tarek to help correct his mathematical thinking? Use words, numbers, or pictures to explain your thinking.

## Challenge

- 10. Find the value of a and b.
- a.  $52 \times a = a \times 73$ 
  - **b.**  $112 \times a = 19 \times b$

## Multiple Choice Questions

#### Choose the correct answer.

- **1.**  $24 \times 15 = 15 \times 24$  represents the property. [El-Beheira 24] (El-Monofia 24] (Cairo 24]
  - A. associative
  - B. commutative
  - C. identity

A. 300

**C.** 500

A. 1

C. 15

D. distributive

- 2. 17 × 1 = 17 is property.
  - (El-Menia 24)

[Cairo - El-Nozha 23]

(Giza 23)

- A. distributive
- B. associative
- C. commutative
- D. multiplicative identity
- 3.  $600 \times 3 = 3 \times -$ [Cairo - El Shrouk 23] 4.  $35 \times 0 = -$ 
  - A. 1

B. 34

D. 600

B. 400

**C**. 0

**D.** 43

- 5. 1 × 15 = -[Beni Suef 24]

  - B. 0 **D**. 16

- The Multiplicative Identity Element is
  - A. 1 **C**. 3
- (Cairo El-Shrouk 23) (Giza 24) B. 2
- D. 4

- 7. If  $3 \times X = 100 \times 3$ , then X = -
  - [Cairo 24] A. 10
    - B. 100
    - **D.** 10,000
- 8. If  $a \times 4 = 4 \times 2$ , then a = -
  - A. 8
- B. 4
- C. 2

- D. 6
  - [Giza 23]

[Alex. 23]

- 9. If  $850 \times m = 850$ , then m = -
  - (Ismaillia 23)
- 10. 34 × A. 1

B. 10

= 3,400

A. 1 C. 2

C. 1000

B. 850 D. 0

- C. 100
- D. 1,000

- 11. 100,000 is times the number 10,000 [Ismaillia 23]
  - B. 100

- 12.  $51 \times 100 = -$ **A.** 5,100
- **B.** 510

- A. 10 **C.** 1,000
- **D.** 10,000

- **C.** 51,000
- **D**. 0
- 13. Which equation would be best to include in an explanation of the commutative property of multiplication? [El-Monofia 24]
  - A.  $5 \times 1 = 5$
- **B.**  $3 \times 2 = 2 \times 3$
- **C.**  $8 \times 0 = 0$
- **D.** 3+0=3
- 14. Determine which choice best shows the Identity Property of Multiplication.
  - **A.**  $0 \times 6 = 0$
- B.  $1 \times 6 = 6$
- C.  $1 \times 6 = 6 \times 1$
- **D.**  $2 \times 6 = 6 \times 2$

#### Lessons

## 6&7

- Associative Property of Multiplication
- Applying Patterns in Multiplication



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## Learn 1 Associative property of multiplication

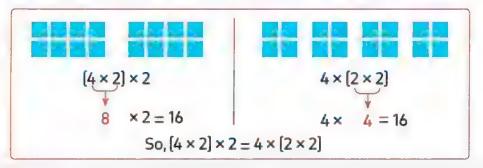
Suppose you make Super Cheesy Sandwiches for 4 people. Each person gets 2 sandwiches. Each sandwich has 2 slices of cheese. How many slices of cheese will you need? Here are some ways to find the product of 4 × 2 × 2.



## **Associative Property of Multiplication**

Associative Property states that when you group factors in different ways, the product is the same.

Use parentheses to group the factors you multiply first.



## Example 1

Use the grouping or Associative Property of Multiplication and complete.

a. 
$$[6 \times 2] \times 5 = 6 \times [9 \times 5]$$

**b.** 
$$[20 \times ] \times 10 = 20 \times [15 \times 10]$$

c. 
$$7 \times [5 \times 2] = [7 \times ] \times 2$$

## Solution [V]

**a.** 
$$[6 \times 2] \times 5 = 6 \times [2 \times 5]$$

**b.** 
$$[20 \times 15] \times 10 = 20 \times [15 \times 10]$$

c. 
$$7 \times (5 \times 2) = (7 \times 5) \times 2$$

**d**. 
$$315 \times [16 \times 120] = [315 \times 16] \times 120$$

#### Notes for parents:

Your child may forget to multiply by the third factor.

To check, ask your child to group the factors in a different way and multiply again.

## Example 2

Solve each problem. Multiply the part in the parentheses first.

$$\mathbf{a.} \ \ (3 \times 2) \times 9$$

**b.** 
$$10 \times [5 \times 3]$$

Solution 🕎

a. 
$$[3 \times 2] \times 9 = 6 \times 9 = 54$$

**b.** 
$$10 \times (5 \times 3) = 10 \times 15 = 150$$

## Example 3

Place parentheses to show one way to find the product.

Then show another way to use parentheses to find the product.

a. 
$$3 \times 2 \times 5$$

**b.** 
$$4 \times 10 \times 2$$

Hint \_

If there are no parentheses, you can choose which pair of numbers to multiply first.

Solution [V]

a. 
$$3 \times 2 \times 5 = [3 \times 2] \times 5$$
  
=  $6 \times 5 = 30$ 

Or 
$$3 \times 2 \times 5 = 3 \times [2 \times 5]$$
  
=  $3 \times 10 = 30$ 

**b.** 
$$4 \times 10 \times 2 = [4 \times 10] \times 2$$
  
=  $40 \times 2 = 80$ 

Or 
$$4 \times 10 \times 2 = 4 \times [10 \times 2]$$

$$= 4 \times 20 = 80$$

## Example 4

Apply the Commutative and the Associative Properties of Multiplication to solve the problems.

a. 
$$3 \times 7 \times 2$$

Hint \_\_\_\_\_

It is helpful to use Commutative Property to multiply the small factors first.

Solution [V]

a. 
$$3 \times 7 \times 2 = 3 \times 2 \times 7$$
 [Commutative Property]  
=  $[3 \times 2] \times 7$  [Associative Property]  
=  $6 \times 7 = 42$ 

**b.** 
$$4 \times 8 \times 2 = 8 \times 4 \times 2$$
 [Commutative Property]  
=  $8 \times [4 \times 2]$  [Associative Property]  
=  $8 \times 8 = 64$ 



your understanding

Find each product.

**b.** 
$$5 \times [5 \times 2] =$$

d. 
$$3 \times 2 \times 8 = -$$

After your child has reviewed the Commutative Property of Multiplication, ask him/her to predict
whether it would make a difference which two factors they multiplied first in 8 x 4 x 2.

#### **Decomposing and Associative Property of Multiplication** Learn 2

- You have learned before how to multiply by multiples of 10, 100 and 1,000 using a basic fact and a pattern of zeroes.
- Here you will use decomposing and Associative Property to solve problems.

## Example 5

Find the product:  $8 \times 30$ 

Solution [V]

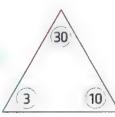


$$8 \times 30 = 8 \times (3 \times 10)$$
$$= (8 \times 3) \times 10$$

$$= [8 \times 3] \times 10$$
  
= 24 × 10

[Decompose 30 to  $3 \times 10$ ]

[Associative Property]



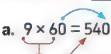
**Another Way** 

## Example

Solve using a strategy you prefer.

c. 
$$4,000 \times 6$$

Solution [



c. 
$$4,000 \times 6$$
  
=  $[1,000 \times 4] \times 6$   
=  $1,000 \times [4 \times 6]$   
=  $1,000 \times 24$   
=  $24,000$ 



your understanding

Use decomposing and Associative Property to find each product.

**a.** 
$$4 \times 40 = -$$

**c.** 
$$2 \times 8,000 = -$$

#### Notes for parents:

- The product has the same number of zeroes as the number of zeroes in the factor with zeroes unless the basic fact has a zero.
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- · Let your child solve using strategy he/she prefers.

#### **Exercise**

## 24

on lessons 6&7

## ASSOCIOIAVE Property of Multiplication

#### Applying Potiterns in Multiplication

• REMEMBER

From the school book

1. Write the missing number.

**a.** 
$$(25 \times 5) \times 6 = 25 \times ( \times 6)$$
 (Giza)

**c.** 
$$2 \times (6 \times 5) = (2 \times 6) \times$$

e. 
$$5 \times 14 \times 2 = [5 \times ] \times 14$$

**b.** 
$$5 \times (10 \times 2) = (5 \times ) \times 2$$

d. 
$$(3 \times 9) \times 5 = \times [9 \times 5]$$

f. 
$$3 \times 6 \times 2 = 6 \times [\times 2]$$

2. Solve each problem. Multiply the part in the parentheses first. Show your work.

**a.** 
$$[2 \times 3] \times 4 =$$

g. 
$$8 \times (6 \times 5) =$$

**b.** 
$$[5 \times 2] \times 3 =$$

**d.** 
$$5 \times (2 \times 3) =$$

f. 
$$9 \times [2 \times 3] =$$
\_\_\_\_\_

h. 
$$[4 \times 5] \times 7 =$$

3. Apply the properties of multiplication to solve the problems.

4. Place parentheses to show one way to find the product. Then show one other way to use parentheses to find the product.

**d.** 
$$8 \times 5 \times 10 =$$

5. Write how many to make up each number as the example.

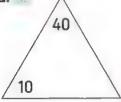
- **► Example :** 40 = \_\_\_4 Tens
- a. (1) 30 = \_\_\_\_\_ Tens
- c. 160 = \_\_\_\_ Tens
- e. 📖 120 = \_\_\_\_\_ Tens
- **g.** 600 = Hundreds
- i. 2,000 = \_\_\_\_\_Thousands

- **b.** 4 80 = \_\_\_\_\_ Tens
- d. 140 = Tens
- f. 110 = Tens
- **h.** 5,000 = \_\_\_\_\_ Thousands
- i. 90 = \_\_\_\_ Tens

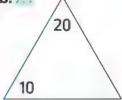
[Alex. - El Montazah 23]

6. Write the missing factor in the box.

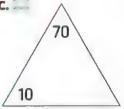
a. 📆



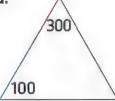
b. (11)



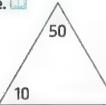
C. 🗀

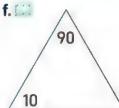


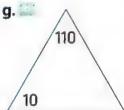
d.

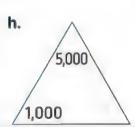


e. 📖









7. Multiplying by multiples 10, 100 and 1,000 Use decomposing and the Associative Property of Multiplication to solve each problem.

- a. 1 7 × 20 = ----
- **b.**  $4.5 \times 50 =$
- c. (4 × 700 = ----
- d. 🕮 3 × 4,000 = \_\_\_\_\_
- e. 9 × 500 = \_\_\_\_\_

8. Solve using a strategy you prefer.

a. 200 × 3 = (Cairo - El-Nozha 23)

c. 600 × 3 = (Cairo - El-Shrouk 23)

d. 6×90 = ----

e. 7,000 × 6 = \_\_\_\_

f. 600 × 4 =

g. 4,000 × 5 =

9. Aisha bought 3 packs of water bottles. Each pack had 3 rows of 4 water bottles. How many water bottles did Aisha buy?



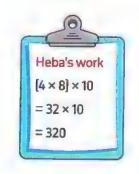
**10.** Hany works 20 hours a week. If he makes L.E. 6 per hour. How much does Hany make in two weeks?

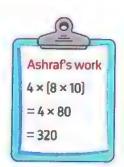


- 11. Angy runs 2 kilometers a day. If she runs five days a week.

  How many kilometers does she run in 10 weeks?
- 12. Review each student's work. Then, answer the questions.

How is Heba's and Ashraf's work the same? How are they different? Which student's strategy do you prefer? Why?





Lessons 6&7 REMEMBER OUNDERSTAND CAPPLY & PROBLEM SOLVING

#### 13. Writing about Math

Use what you have learned about the Associative Property of Multiplication to help Farouk solve the problem. Use words and numbers to explain your thinking.

Farouk is trying to solve the problem  $2 \times 7 \times 4$ 

He starts by solving  $2 \times 7$  and gets 14. Place parentheses to show how Farouk started this problem.  $2 \times 7 \times 4$ 

Next, he writes  $14 \times 4$  but he does not know how to solve that multiplication problem. Can you show Farouk another way to solve the problem?

## Challenge

14. Marwan's mom gives him L.E. 5 every day for lunch at school. If he only pays L.E. 3 for lunch, how much will he save in 10 weeks if he goes to school five days weekly?



#### Choose the correct answer.

Which of the following represents the Associative Property?

(El-Beheira 23)

**A.**  $11 \times 129 = 129 \times 11$ 

**B.**  $2 \times [5 \times 3] = [2 \times 5] \times 3$ 

**C.**  $0 \times 17 = 0$ 

**D.**  $[2 \times L] + W$ 

2. The Associative Property applied on  $7 \times (8 \times 10)$  is —

[El-Menia 24]

- **A.**  $15 \times 10 = 150$
- **B.**  $7 \times 80 = 560$
- **C.**  $7 \times 50 = 780$
- **D.**  $7 \times 18 = 126$

**3.** 253 + (226 + 142) = (253 + \_\_\_\_\_\_) + 142

[Alexandria 23]

- A. 253
- **B**. 226

- C. 142
- **D**. 368

4.  $2 \times (5 \times 4) = (2 \times -----) \times 4$ 

(Kafr El-Sheikh 24) (Souhag 23)

A. 2

**C**. 5

D. 4

- 5.  $2 \times 3 \times 4 = -$ 
  - A. 234
- B. 9

C. 24

**D**. 10

6.  $(300 \times 7) \times 0 = -$ 

**A.** 2,100

- **B.** 3,070
- C. zero
- **D**. 307

7.  $5,000 \times 2 = -$ 

- 8. The missing factor in the box
  - equals —

C. 10 Hundreds

A. 1,000 —

- B. 2 Thousands
- **A.** 7,000
- B. 70

- D. 10 Thousands
- **C.** 700
- **D.** 7 / 10

9. 8,000 = ---- Tens

[Giza 23]

- 10. 700 = - Hundreds (Cairo El-Nozha 23)

- A. 800
- **B**. 80,000
- A. 7

**B**. 700

- **C**. 80
- **D**. 8

C. 70

- **D.** 7,000
- 11. Which equation would be best to include in an explanation of the Associative Property

of Multiplication?

[Alexandria - El-Montaza 22]

**A.**  $[9 \times 12] \times 0 = 0$ 

**B.**  $[3 \times 7] \times 2 = 3 \times [7 \times 2]$ 

C.  $[4 \times 6] \times 1 = 4 \times 6$ 

**D.**  $[11 \times 8] \times 9 = 9 \times [11 \times 8]$ 

## **Unit Five Assessment**



#### Choose the correct answer.

1.  $7 \times 5 = k \times 7$ , then k = --

[Kafr El-Sheikh 24] [Giza 24]

- A. 5
- B. 7

**C**. 2

**D.** 35

- **2.** 375 × = 37,500
  - A. 10
- B. 100

**C.** 1,000

**D**. 10,000

3.  $125 \times 0 = -$ 

(Luxor 24)

- A. 25
- **B**. 205
- C. Zero

- **D**. 250
- 4. Which equation would be the best to include in an explanation of the Commutative
  - Property of Multiplication?
  - **A.**  $3 \times 5 = 5 \times 3$

**B.**  $4 \times 16 = [4 \times 11] + [4 \times 5]$ 

C.  $[6 \times 4] \times 2 = 6 \times [4 \times 2]$ 

- **D.**  $5 \times 1 = 5$
- 5. Which equation would be the best to include in an explanation of the Associative
  - Property of Multiplication?
  - **A.**  $3 \times 1 = 3$

B.  $9 \times 6 = 6 \times 9$ 

C.  $6 \times [2 \times 4] = [6 \times 2] \times 4$ 

- **D.**  $5 \times 16 = (5 \times 11) + (5 \times 5)$
- 6.  $2+2+2+2+2+2=2\times$

[Cairo 24]

- A. 2
- **B**. 3

- C. 5 ---
- D. 6
- 7. The bar model 3 represents that the number ———— is 5 times 3 3 3
  - number 3

[Giza - Abo El-Nomros 23]

- A. 8
- **B**. 15

C. 20

D. 30

#### 2. Complete.

1. 4×3×7=4× \_\_\_\_\_

(Cairo - El-Kobba 22)

- 2. The multiplicative equation of 8+8+8+8+8=40 is -
- The Multiplicative Identify Element is —

[Alexandria - Montaza 22]

- 4. 3,200 = Hundreds
- 5.  $4 \times 7 = 7 \times 4$  ————— Property of Multiplication.

[Port Said 22]

6. If P × 1 = 63, then P = \_\_\_\_

[El-Monofia 24]



[Cairo - El-Nozha 23]

(Cairo - El-Shrouk 23)

3. Choose the correct answer.

#### 1. The number 15 equals 5 times the number -

[Cairo - Rod El-Farag 23]

**B**. 5

**C.** 3

**D.** 15

2. If 
$$X \times 10 = 100$$
 then  $X = -$ 

(Souhag 23)

**B.** 5

C. 15

D. 20

[Alex, 23]

**B.** 2,160

C. 1

D. 0

4. 
$$13 \times 24 = 24 \times 13$$
 represents ————————————————Property.

(Giza 23)

A. Associative

**B.** Commutative

C. Multiplicative Identity

D. Distribution

#### 5. What is the number that is 10 times the number 18?

[El-Menia 23]

B. 1.800

**C.** 180

D. 18

(Giza 23)

A. 8

B. 4

C. 2

D. 6

7. 
$$2 \times [7 \times 4] = [2 \times \dots] \times 4$$

A. 2

B. 7

C. 4

**D**. 28

4. Answer the following.

- 1. Ayman ate 4 figs and his brother ate 3 times as him, how many figs did his brother eat?

  His brother ate = \_\_\_\_\_\_ [Cairo El-Shrouk 23]
- 2. Hany bought 3 packs of water bottles. Each pack had 3 rows of 4 water bottles.
  How many water bottles did Hany buy?
  [Giza 23]
- 3. Apply the properties of multiplication to solve the problems.

a. 
$$3 \times 2 \times 4$$

4. Find the unknown value.

a. 
$$7 \times 5{,}000 = 7 \times 5 \times m$$

**b.** 
$$(3 \times 7) \times 6 = 3 \times [m \times 6]$$

c. 
$$9 \times 4 = 4 \times m$$

d. 
$$248 \times m = zero$$



Mathematical Operations and Algebraic Thinking



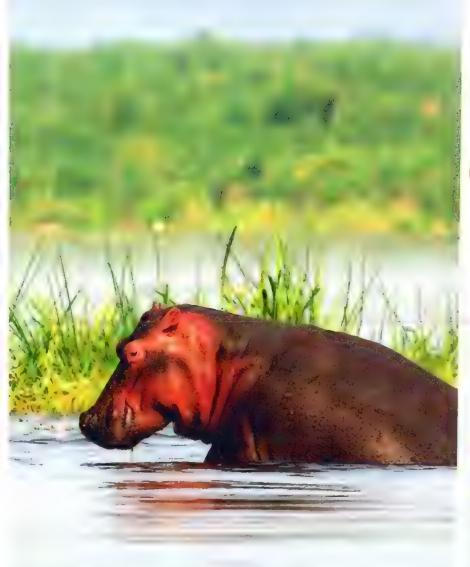
## **Factors and Multiples**

- ► Concept 1: Understanding Factors
- ► Concept 2 : Understanding Multiples



# CONCEPT

## **Understanding Factors**



#### Lessons 1&2

Identifying Factors of Whole Numbers
Prime and Composite Numbers

#### Learning Objectives:

- Students will define factors of a whole number.
- Students will find all factors of a given number between 0 and 100.
- Students will explain patterns they observe in numbers that have 2,5 or 10 as factors.
- Students will find all factors of a given number between 0 and 100.
- Students will explain patterns they observe in numbers that have 3,6 or 9 as factors.
- Students will determine if a number is prime or composite.

#### ▶ Lesson 3

Greatest Common Factor [G.C.F]

#### Learning Objectives:

- Students will find common factors between two whole numbers.
- Students will identify the greatest common factor between two whole numbers.

#### **Fast Fact**

Hippos are considered the second largest land animal on Earth (first place goes to the elephant!). Males measures 1 m and a half tall, and can weigh up 3,200 kg. That's as much as three small cars!

Lessons

1&2

- Identifying Factors of Whole Numbers
- Prime and Composite Numbers



200

## Learn 1 Identify factors of whole numbers

- A factor is a number multiplied by another number to get a product.
- ► Examples:

• Many numbers can be broken into factors in different ways.

#### For Example:

$$12 = 1 \times 12 = 2 \times 6 = 3 \times 4$$

So, the factors of 12 are 1, 2, 3, 4, 6 and 12.

There are 6 factors or 3 factor pairs.

You can show the factors of 12 in many ways as:



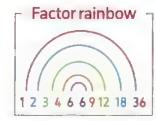
- Factor	T-chart
1	12
2	6
3	4

## Example 1

Find all factors of 36. and create a factor rainbow, and factor T-chart.

$$36 = 1 \times 36 = 2 \times 18 = 3 \times 12 = 4 \times 9 = 6 \times 6$$

So, the factors of 36 are 1, 2, 3, 4, 6, 9, 12, 18 and 36.



Factor	T-chart -
1	36
2	18
3	12
4	9
6	6

#### Notes for parents:

- Let your child find the factors of 15.
- · Help your child show the factors by factor rainbow and factor T-chart.

## How can you find all the factors of a number?

#### Helpfull Hint:

1	is a factor of any number. Every number will have a factor pair of 1 and	
2	is a factor, if the digit in the ones place is even (The ones digit is : 0, 2, 4, 6 or 8).	8,24,48
3	is a factor, if the sum of the digits is a number that exists when skip counting by 3s.	9,18,24
4	is a factor, if the number is existing when skip counting by 4s.	8,12,16
5	is a factor, if the ones digit is 0 or 5.	5,15,20
6	is a factor, if the number is even and has a factor 3.	12,18,24
9 -	is a factor, if the sum of the digits is a number that exists when skip counting by 9s.	9,27,45
10-	is a factor, if the ones digit is 0.	20,50,100

## Example 2

#### Answer the following questions.

- a. Is 3 a factor of 29? Explain how do you know.
- b. Is 9 a factor of 54? Explain how do you know.
- c. Is 6 a factor of 48? Explain how do you know.

## Solution [V]



- a. No, because 2 + 9 = 11 and 11 is a number does not exist when skip counting by 3s.
- **b.** Yes, because 5 + 4 = 9 and 9 is a number existing when skip counting by 9s.
- c. Yes, because 48 is even and 4 + 8 = 12 and 12 is a number existing when skip counting by 3s.

Ask your child more questions of factors such as: Is 2 a factor of 14? Is 5 a factor of 61? and more questions, then let your child explain how did he/she know.

## Example 3

Find all the factors of 48.

## Solution [V]



To find all the factors of a number, make an organized list of multiplication sentences. Write sentences until your factors start to repeat. (Ignore any sentences that won't work). Then list the factors. Find all the factors of 48.

 $48 = 1 \times 48$  [1 is a factor of every whole number]

2 × 24 [48 is even]

 $3 \times 16$  [4 + 8 = 12 and 12 is existing when skip counting by 3s.]

4 × 12 (48 is existing when skip counting by 4s.)

-5×

6×8 (48 is even, and 3 is a factor)

7×-

8 × 6 [← STOP! Repeat of 6 × 8].

The factors of 48 are 1, 2, 3, 4, 6, 8, 12, 16, 24 and 48. There are 5 factor pairs.



#### 1112 .

your understanding

1. Find the factors of 15 and create a factor rainbow and factor T-chart.

#### 2. Choose the correct answer.

- a. 5 is a factor of -
  - A. 50

B. 51

**C**. 52

**D**. 53

- **b.** Which number is a factor of 20?
  - A. 6

- **C**. 30

D. 40

- c. The number 11 has factors.
  - A. 2

**B**. 3

C. 4

D. 5

- d. The number 32 has -— factors.
  - A. 4

- B. 6
- C. 8

**D**. 10

- e. Which is the factor of every number?
  - A. 0

B. 1

C. 2

D. 10

#### Notes for parents:

• Ask your child to find all the factors of 72 by using the helpful hint to check all the factors.

## Learn 2 Prime and composite numbers

You can use the factors of a number to tell if it is a prime number or a composite number.

A Prime number is a whole number that has exactly two different factors, 1 and itself.

#### Example:

5 is an example of a prime number. It has only two different factors, 1 and 5.

More examples of prime numbers

Number	Factors
17	1,17
29	1,29
31	1,31

A Composite number is a whole number that has more than two factors.

#### ▶ Example:

6 is an example of a composite number. Its factors are 1, 2, 3 and 6.

▶ More examples of composite numbers

Number	Factors
15	1,3,5,15
18	1,2,3,6,9,18
25	1,5,25

#### Remarks

- The number 1 is neither prime nor composite because it has only ONE factor.
- 2 is the smallest prime number.
- All prime numbers are odd numbers except 2.
- The following table shows the prime numbers which lie between 1 and 100:

2	3	5	7	11	13	17	19	23
29	31	37	41	43	47	53	59	61
	67	71	73	79	83	89	97	

Use the 100-chart to check the prime and the composite numbers and let your child identify how he/she knew the difference between them.

## Example 4

Check each of the following numbers if it is a prime or a composite number.

a. 9

b. 13

c. 19

Solution [7]

- a.  $9 = 1 \times 9$

$$=3\times3$$

9 has more than two factors (1, 3, 9).

**So**, 9 is a composite number.

b.  $13 = 1 \times 13$ 

13 has exactly two different factors [1,13].

So, 13 is a prime number.

c.  $19 = 1 \times 19$ 

19 has exactly two different factors [1,19].

So, 19 is a prime number.



## check your understanding

Choose the correct answer.

A. 9

B. 16

- C. 19
- D. 21

is a prime number.

A. 1

C. 7

D. 12

isn't a prime number.

— is a prime number.

A. 1

A. 1

**C.** 5

D. 7

is a composite number. B. 3

C. 13

D. 15

isn't a composite number.

A. 11

**B.** 12

C. 14

D. 20

f. The smallest prime number is –

**D**. 3

C. 2

g. The smallest odd prime number is

C. 2

**D**. 3

h. The prime number between 44 and 50 is -

A. 45

A. 0

B. 46

C. 47

D. 49

Notes for parents:

· Give your child a group of numbers and ask him/her to identify the prime numbers and the composite numbers.

## Exercise on lessons 1&2

- Bentifying factors of Whole Number
- ▶ Prime and Composite Numbers

	-	-	4100	B. 46	Sec.	and the	
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PROBLEM SOLVING

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#### First: Exercises on factors

1. Determine if the given number has 2 as a factor, 5 as a factor, or 10 as a factor. Circle yes or no.

	Number	Is 2 a factor?		Is 5 a factor?		Is 10 a factor?	
a.	26	Yes	No	Yes	No	Yes	No
b.	70	Yes	No	Yes	No	Yes	No
c.	15	Yes	No	Yes	No	Yes	No
d.	17	Yes	No	Yes	No	Yes	No

-				
つ	Highlight :	or circle the	factors of the	numbers listed.
	PHOLICIALL	ui circue u ie	ICLUIS OF THE	TRUTTELS USECU.

a. 15: c. 12:

e. 16:

f. 20:

- 5
  - 10

  - 5 10
- 2

2

- 2
- 2
- 3
- 5 5
- 8

b. 30: 2

d. 25: 2

- 9 10 10
- 10

10

- 3. Complete with "is a factor of" or "is not a factor of":

  - a. 7— \_14
  - c. 2 \_\_\_ 100
  - e. 6-96
  - g. 4---88
  - i. 19 ----19

- **b**. 5 52
- d. 3-36
- f. 1-67
- h. 9 27
- j. 8 \_\_\_ 40

#### 4. Answer the following problems.

- a. Is 2 a factor of 23? How do you know?
- **b.** Is 5 a factor of 35? How do you know?
- c. III Is 6 a factor of 84? How do you know?
- d. Is 3 a factor of 53? How do you know?

	e. Is 4 a factor of 32? How do you know?										
	f. Is 7 a factor of 48? How do you	. Is 7 a factor of 48 ? How do you know ?									
	g. 🔲 Is 9 a factor of 63 ? How do	you know?									
5.	Find all the factors of the fol	lowing and o	reate a factor rainbow a	and a factor T-chart.							
	a. 20. There are 3 factor pairs.		Factor rainbow-	Factor T-chart							
	Factors are:										
	b. 40. There are 4 factor pairs.  Factors are:		Factor rainbow	Factor T-chart							
	c. 36. There are 5 factor pairs.		- Factor rainbow-	Factor T-chart							
6.	List all the factors of each numb	er. You may	create a factor rainbow	or a factor T-chart.							
	a. 6	— [Alex. 23]	<b>b.</b> 10	[El-Monofia 24]							
	<b>c.</b> 38		d. 25								
	e. 48		f. 21————								
	g. 19		h. 35								
	i. 13—————		j. 49								

a. The number	The number is an even number between 1 and 10. Some of its factors include 1, 2 and 3.  What number is it?									
	The number is an even number between 20 and 30. Some of its factors include 1, 2, 4, 7 and 14. What number is it?									
c. The numbe	er is an even number grea r is it ?	ater than 40. It has 10 as	a factor. It is less than 60							
	The number is a two-digit number. It has 3 as a factor. Its tens digit is less than its ones digit. One of its factor pairs is 4 and 6. What number is it?									
	The number is a two-digit number. It has 5 as a factor. Its tens digit is less than its ones digit. One of its factor pairs is 5 and 7. What number is it?									
	ses on prime and com rime" or "Composite". b. 4 is————	posite numbers  c. 29 is	- <b>d.</b> 3 is							
<b>e</b> . 5 is ———	f. 6 is———	g. 7 is———	h. 11 is———							
i. 13 is	j. 12 is	k. 16 is	- L. 23 is———							
Complete.										
a. The smallest	orime number is ———	_	[Kafr El-Sheikh 24] [Giza 23]							
b. The prime nu	nberhas — facto	ers.	[Souhag 23]							
c. The prime nur	nber has two different fac	ctors which are	and ———							
d. The only even	prime number is ———	(Beni Suef 2	4] (Giza – Abo El-Nomros 23)							
e. The 2-digit pri	me number which is less	than 13 is ————								
f. The prime nun	nbers between 60 and 70	are ———								
g. The number 3	7 has ——— factors ar	nd it is a ——— numb	er.							
h. The number 1	s is a — number be	ecause it has — f	actors.							

## 10. List all the factors of each number. Then, write if the number is prime or composite.

- a. 15 (Port Said 24)
- c. 🕮 23
- e. 🚇 18
- g. 🛄 21
- i. 50 ————
- k. 🕮 31————

- **b.** 24 ——— [El-Beheira 24] [Alex. West 22]
- d. 37
- f. 32
- h. 12 ——— [El-Menia 24] (Cairo El-Salam 23)
- i. 22\_\_\_\_
- L 🕮 44 -----

#### 11. Prime Numbers less than 100. Identify all of the prime numbers less than 100. Use skip counting and factor patterns to help you eliminate composite numbers.

- 1. Circle 2 and cross out all other numbers that you say when you skip count by 2s.
- 2. Circle 3 and cross out all other numbers that you say when you skip count by 3s.
- 3. Circle 5 and cross out all other numbers that you say when you skip count by 5s (some are already crossed out).
- 4. Circle 7 and cross out all other numbers that you say when you skip count by 7s.
- 5. Circle all numbers that remain except for 1. When you are finished, the circled numbers are prime and the crossed out numbers are composite.

91	92	93	94	95	96	97	98	99	100
81	82	83	84	85	86	87	88	89	90
71	72	73	74	75	76	77	78	79	80
61	62	63	64	65	66	67	68	69	70
51	52	53	54	55	56	57	58	59	60
41	42	43	44	45	46	47	48	49	50
31	32	33	34	35	36	37	38	39	40
21	22	23	24	25	26	27	28	29	30
11	12	13	14	15	16	17	18	19	20
1	2	3	4	5	6	7	8	9	10

12. What's the Error? Ashraf listed the first five prime numbers as 2, 3, 7, 11 and 13. Describe his error. Write the correct answer.

## Challenge

13. Write all prime numbers which are between 46 and 62.

**14.** Write all composite numbers which are between 5 and 23

# Multiple Choice Questions

#### Choose the correct answer.

1.	Which of those no	umbers is pr	ime?	2. Which of the following is a composite					
			[Alex. 24]	numbe	r?		[El-Menia 24]		
	A. 22	<b>B</b> . 35		A. 11		<b>B.</b> 13			
	<b>C.</b> 21	<b>D.</b> 19		<b>C.</b> 16		<b>D.</b> 17			
3.	The composite nu	ımberhas -			allest prim	e number is			
	factors.		[Cairo 23]		(El-Menia	24] [Port Said	d 24] (Alex. 24)		
	A. 1	B. moi	re than 2	A. 0		B. 1			
	C. 2	<b>D</b> . 0		C. 2		<b>D</b> . 3			
5.	The smallest odd	prime numl	per	6. The prin	ne number	just after 1	5		
139	is ———	is ——			[Alex. 23]				
	<b>A</b> . 0 <b>B</b> . 1	<b>C</b> . 2	<b>D.</b> 3	A. 16	<b>B.</b> 17	<b>C</b> . 18	<b>D</b> . 12		
7.	All the numbers 11			8. The print factors	me number	rhas —			
			(Souhag 24)	(Souha	g 24 ] [El-Kal	youbia 23 ) (El	l-Dakahlia 22)		
	<b>A</b> . 11 <b>B</b> . 13	<b>C.</b> 17	<b>D.</b> 15	A. 0	<b>B</b> . 2	<b>C</b> . 1	D. 4		
9.	Which of the follo	_	a prime – El-Marg 23)	10. 3 is a fa	ctor of —		(Cairo 24).		
	A. 7 B. 15	C. 19	D. 13	A. 18	<b>B.</b> 20	<b>C.</b> 25	<b>D.</b> 31		
11.	The number of fac	ctors of 29 is		12.	- is a facto	r of 63.	(Ismailia 22)		
	factors.		[Alex. 24]	A. 2		<b>B</b> . 5			
	<b>A</b> . 2 <b>B</b> . 3	C. 4	<b>D</b> . 5	C. 7		D. 11			
13.		—— has the		14. The nur	mbers 1, 2, 4	, 5, 10, 20 ar	e all		
	2 and 5.		(Giza 24)	factors	of number		[Alex. 24]		
	<b>A.</b> 25 <b>B.</b> 15	<b>C</b> . 10	<b>D</b> . 5	<b>A.</b> 40	<b>B.</b> 20	<b>C</b> . 10	<b>D.</b> 5		
<b>15.</b>	All factors of number	oer 16 are		16. The mis	_	in the oppo	site $\frac{12}{2}$		
			[Alex. 24]	factor T-	-chart is —		2 6 3 4		
	<b>A.</b> 1, 2, 4, 8	B. 1,16,	2,8			(EI	. Monofia 24)		
	C. 1, 2, 4, 8, 16	D. 0,16,	2, 8, 4	<b>A.</b> 3	<b>B.</b> 1	C. 24	<b>D</b> . 0		

## Greettest Common Edetor (G.C.E)

## Learn

#### How can you find the greatest common factor for two numbers?

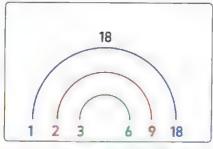
- Common factors of two numbers are factors that are the same.
- The greatest common factor (G.C.F) of two numbers is the greatest number that is a factor of both.

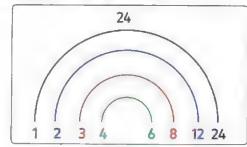
#### How can you find the greatest common factor (G.C.F) between two numbers or more?

- 1. Identify the factors of each number.
- 2. Find the common factors for these numbers.
- Determine the greatest common factor [G.C.F].

#### For Example:

#### How can you find the greatest common factor for 18 and 24?





- Factors of 18: 1, 2, 3, 6, 9, 18
- Factors of 24: 1, 2, 3, 4, 6, 8, 12, 24
- Common factors: 1, 2, 3, 6
- The greatest common factor [G.C.F]: 6

## Example 1

#### Find all the common factors and G.C.F of each pair.

- a. 12 and 15
- b. 16 and 28
- c. 7 and 11

#### Solution [V]



a. 12:[1], 2, 3, 4, 6, 1215:1,3,5,15

Common factors: 1,3

G.C.F: 3

Factor	s of 12	Factors of 15				
1	12	1	15			
2	6	3	5			
3	4					

#### Notes for parents:

 Tell your child that common factors and greatest common factor are helpful to solve many problems in life.



**b.** 16:11,2,4,8,16 28: 1, 2, 4, 7, 14, 28

Common factors: 1, 2, 4

G.C.F: 4

c. 7:11.7

Common factor: 1

G.C.F:1

Factor	s of 16	Factors of 28				
1	16	1	28			
2	8	2	14			
4	4	4	7			

#### Note that:

- 1 is the common factor of all whole numbers.
- All prime numbers has one common factor that is 1. Such as 7 and 11.

## Example 2

For a dinner party, Adam is creating individual servings. He has 28 pieces of fruit and 14 yogurt cups. If he wants each serving to be identical with no food left over, what is the greatest number of servings Adam can create? How many pieces of fruit and how many yogurt cups will be in each serving?

#### Solution [V]



Factors of 28:1,2,4,7,14,28

Factors of 14:1,2,7,14

Common factors: 1,2,7,14

G.C.F: 14

The greatest number of individual servings is 14 of 2 pieces of fruit and one yogurt cup in each individual serving.



your understanding

Find all the common factors and G.C.F of each pair.

a. 9 and 12

**b.** 25 and 15

 Give your child two numbers and let him/her find the common factors and the GCF of them such as (5 and 17), (4 and 12).

# Exercise 2/6

## Greatest Common Factor (G.C.F)

From the school book

OAPPLY ... PROBLEM SOLVING

1. List the factors of each number. Highlight or circle the common factors of each pair of numbers.
<b>a.</b> 16 and 20
Factors of 16 :
Factors of 20 :
<b>b.</b> 43 18 and 4
Factors of 18:
Factors of 4:
c. 🕮 20 and 30
Factors of 20:
Factors of 30:
d. 🕮 17 and 22
Factors of 17 : ——————————————————————————————————
Factors of 22:
e. 🖾 21 and 35
Factors of 21:
Factors of 35:
f. 🔛 36 and 42
Factors of 36:
Factors of 42:
2. List the common factors of the given numbers.
a. 4 and 12
<b>b.</b> 10 and 35
<b>c.</b> 17 and 34
<b>d.</b> 18 and 24 — — — — — — — — — — — — — — — — — —

non factor (G.C.F) of :
GCF:
GCF:
(Giza 24) (Sharkia 22)
(0.00 - 1, (0.00 - 1, 0.00
GCF:
(Giza - Abo El-Nomros 23)
GCF:
(Souhag 23)
GCF:
[Alex. 24] (Ismailia 22)

la	17	-	-4	10
ю.	1/	an	ш	18

(Kafr El-Sheikh 24) (El-Menia 24) (Giza 23) (Cairo 23)

c. 40 and 50

d. 20 and 30

[El-Monofia 24] [Alex. 24]

e. 10 and 24

(Port Said 24)

f. 35 and 25

(Cairo 24) (Monofia - Sers El Layan 23) (Monofia - Shebin El-Koum 22)

g. 24 and 40

(Port Said 24)

h. 4 33 and 11

i. 20 and 12

[Cairo 23]

j. 18 and 30

[Cairo - El-Marg 23]

k. 24 and 18

(Giza 23)

L. 12 and 15

(Giza 23)

5. Use what you know about factors and common factors to solve each problem.

- a. Sylvia has 21 pencils and 14 erasers. She wants to put them in groups, What is the greatest number of groups that can be made so that each group has the same number of items? How many pencils will be in each group? How many erasers will be in each group?
- b. There are 40 girls and 32 boys who want to participate in lap on teams. If each team must have the same number of girls and the same number of boys, what is the greatest number of teams that can participate? How many girls will be in each team? How many boys will be in each team?

	nallenge
	Amira and her friends are going on a picnic. Amira wants to make snack packs of apples and candy to take on the picnic. She has 24 apples and 36 small bags of candy. What is the greatest number of snack packs Amira can make if each pack must have exactly the same number of apples and exactly the same number of bags of candy with no snacks left over? How many apples will be in each snack pack? How many bags of
e.	Eslam has 60 blue marbles and 24 red marbles. If he wants to place them in identical groups without any marbles left over, what is the greatest number of groups Eslam can make? How many blue marbles and how many red marbles will be in each group?
d.	Mohab is making flower arrangements. He has 7 roses and 14 daisies. If Mohab wants to make all the arrangements identical and have no flowers left over, what is the greatest number of flower arrangements that he can make? How many roses and how many daisies will be in each flower arrangement?
	be divided into groups of girls and boys. What is the greatest number of groups that can be made so that each group has the same number of children? How many children will be in each group of boys? How many children will be in each group of girls?

# Multiple Choice Questions

#### Choose the correct answer.

1.	. The common	factor of all numbers	2. Which of the following are the common					
	is	(Kalyoubia 23) [El-Menia 24]	factors of 4 and 6?					
	<b>A.</b> 3	<b>B.</b> 2	A. 1 and 2	<b>B.</b> 1 and 3				
	<b>C</b> . 1	<b>D</b> . 0	<b>C.</b> 2 and 3	<b>D.</b> 3 and 4				
3.	Which of the	following are the common	4. 1 and 7 are the common factors					
9	factors of 15 a	nd 25?	of ———					
			A. 2 and 7	B. 2 and 14				
	<b>A.</b> 1 and 3	<b>B</b> . 1 and 5	C. 7 and 12	D. 7 and 14				
	<b>C.</b> 1 and 15	<b>D.</b> 1 and 25						
5.	Which two nu	mbers are common factors	6. Which number is the greatest common factor (G.C.F) of 12 and 6? (Cairo - Heliopolis 2)					
	A. 2	B. 6	A. 2	<b>B.</b> 3				
	<b>C</b> . 8	D. 9	C. 6	D. 12				
	E. 12	F. 24						
7.	Which number	er is the greatest common	8. Which number	is the greatest common				
O	factor [G.C.F]	of 5 and 11?	factor of 45 and	160? (Damietta 22)				
	<b>A</b> . 2	<b>B</b> . 5	<b>A.</b> 5	<b>B</b> . 20				
	C. 1	D. 11	<b>C.</b> 15	<b>D.</b> 30				
9.	The greatest o	common factor (G.C.F) of	10. The G.C.F of 20 and 30 is					
0	the two numb	ers:10,24	•					
	is ———	[Aswan 23]						
	<b>A.</b> 34	<b>B.</b> 22	A. 1	B. 4				
	<b>C.</b> 2	<b>D.</b> 14	<b>C.</b> 5	<b>D.</b> 10				

# CONCEPT 2

# Understanding Multiples



#### Lessons 4&5

Identifying Multiples of Whole Numbers Common Multiples

#### **Learning Objectives:**

- Students will define multiples of whole numbers.
- Students will identify multiples of whole numbers.
- Students will identify common multiples between two numbers.

#### ▶ Lesson 6

Relationships between Factors and Multiples

#### Learning Objectives:

- Students will explain the relationship between factors and multiples.
- Students will determine if a number is a factor or a multiple of another number.

#### **Fast Fact**

Believe it or not, Koalas can sleep up to 18 hours a day! How many hours do they sleep per week?

# 4,11,15

- Identifying Multiples of Whole Numbers
- Common Multiples

## Learn 1 Multiples of whole numbers

## What is a multiple?

A multiple is the product of a given number and another whole number.

- You can find multiples of any number using any of these ways:
- Multiplying by the whole numbers.
- Skip-counting on the number line.
- Skip-counting using 100 Chart.



To find the multiples of 2, use any of these ways:



$$2 \times 0 = 0$$
,  $2 \times 1 = 2$ ,  $2 \times 2 = 4$ ,  $2 \times 3 = 6$ ,  $2 \times 4 = 8$ , and so on.

Then the products 0, 2, 4, 6, 8, ... are called the multiples of 2

Using skip-counting by 2s on the number line.

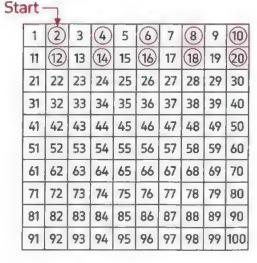


Then the multiples of 2 are 0, 2, 4, 6, 8, 10, 12 and so on.

Use skip-counting by 2s using 100 Chart.

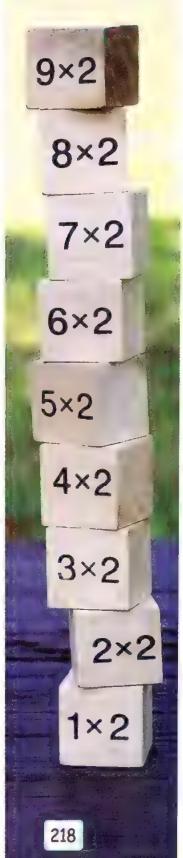
> Then the multiples of 2 (except zero) are

2,4,6,8,10,12 and so on.



#### **Notes** for parents:

· Skip counting on the number chart helps your child notice the patterns to help him/her find the multiples more quickly.



#### Remarks

- Zero is a multiple for any number.
- The multiple of any number not equal to 0 is divisible by this number.

For Example:

 $2 \times 5 = (10)$ 

▶ 10 is a multiple of both 2 and 5

10 is divisible by 2

10 is divisible by 5



## Example 1

Find the multiples of.

a. 4

**b**. 10

## Solution [8]



a. 
$$4 \times 0 = 0$$

$$4 \times 1 = 4$$

$$4 \times 2 = 8$$

and so on.

Then:

The multiples of 4 are:

0,4,8,12,...and so on.



**b.** 
$$10 \times 0 = 0$$

$$10 \times 1 = 10$$

$$10 \times 2 = 20$$

$$10 \times 3 = 30$$

and so on.



Then:

The multiples of 10 are:

0,10,20,30,... and so on.



#### fire in

your understanding

- a. List 4 multiples of 8.
- b. Circle the numbers that are multiples of 3.

12, 17, 6, 22, 18, 27

• Explain that the number of multiples that a number has is endless.

## Learn 2 Common Multiples

A common multiple is a multiple of two or more numbers.

## Finding common multiples using number chart

Look at the column that starts with 2.

All the numbers in this column are multiples of 2.

• List the multiples of 2 on the table.

Look at the column that starts with 3.

All the numbers in this column are multiples of 3.

• List the multiples of 3 on the table.

These numbers that are on both lists are common multiples of 2 and 3.

• List the common multiples of 2 and 3.

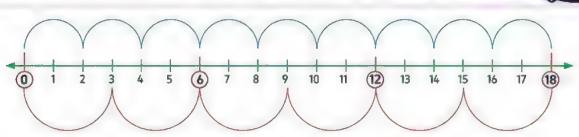
×	0	1	2	3	4	5	6	7	8	9	10	11	12
0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	1	2	3	4	5	6	7	8	9	10	11	12
2	0	2	4	6	8	10	12	14	16	18	20	22	24
3	0	3	6	9	12	15	18	21	24	27	30	33	36
4	0	4	8	12	16	20	24	28	32	36	40	44	48
5	0	5	10	15	20	25	30	35	40	45	50	55	60
6	0	6	12	18	24	30	36	42	48	54	60	66	72
7	0	7	14	21	28	35	42	49	56	63	70	77	84
8	0	8	16	24	32	40	48	56	64	72	80	88	96
9	0	9	18	27	36	45	54	63	72	81	90	99	108
10	0	10	20	30	40	50	60	70	80	90	100	110	120
11	0	11	22	33	44	55	66	77	88	99	110	121	132
12	0	12	24	36	48	60	72	84	96	108	120	132	144

## Finding common multiples using number line

• You can use a number line to find common multiples.

#### Example:

Use a number line to find common multiples of 2 and 3



The common multiples of 2 and 3 are 0, 6, 12, 18,... and so on.

#### Remark

Zero is a common multiple for any number.

#### Notes for parents:

 Ask your child use a number chart to find multiples of a number, ask him/her to use it to find the common multiples of two numbers.

### Example 2

Find the multiples of each of the numbers 4 and 6 up to 50, then find the common multiples between them.

#### Solution [7]

- The multiples of 4 are : (0), 4, 8, (12), 16, 20, (24), 28, 32, (36), 40, 44, (48)
- The multiples of 6 are : (0), 6, (12), 18, (24), 30, (36), 42, (48)
- The common multiples of 4 and 6 are: 0, 12, 24, 36, 48



Find the multiples of each of 7 and 3 up to 50, then find the common multiples between them.

### Solution [V]

The multiples of 7 are

The multiples of 3 are

The common multiples are \_

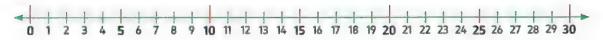


· Listing multiples help your child find common multiples.

# Exercise 27 on lessons 4&5

- 🏲 विध्यक्ति पासू लियांबीब्राइट वर्ग Whole Monitors
- Common Multiples
- REMEMBER
  - UNDERSTAND
- O APPILY
- ROBLEM SOLVING

- From the school book
- 1. !!! Skip counting on a number line. Draw a line connecting each number to show skip counting on the number line. Start at 0 each time.
  - a. Find the multiples of 2



The multiples of 2 are -

b. Find the multiples of 5



The multiples of 5 are

- 2. Color the multiples. Use the hundreds chart.
  - a. (Li) Color the multiples of 9

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

The multiples of 9 are: ——

b. Color the multiples of 10

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

The multiples of 10 are: -

3. a. Circle the numbers that are multiples of 6.

7 , 16 , 12 , 6 , 21 , 24 , 18

**b.** Circle the numbers that are multiples of 3.

6 , 17 , 21 , 15 , 10 , 36 , 29

c. Circle the numbers that are multiples of 8.

6 , 8 , 10 , 16 , 18 , 24 , 30 , 32 , 36

d. Which of the following is NOT a multiple of 4?

4 , 30 , 20 , 44 , 36

e. Which of the following is NOT a multiple of 5?

5 , 31 , 35 , 40 , 15 , 10 , 16

4. a. List 5 multiples of 7.

b. List 5 multiples of 8.

c. List the multiples of 3 up to 20.

d. List the multiples of 5 up to 30.

e. List the multiples of 9 up to 60.

5. Find the missing multiple.

a. 5 , 10 , 15 ,

**b**. 8, 16, 24,

c. 10, 20, ,40

d. 70,80, ,100

e. 12, 15, , 21

f. 22, ,44,55

g. 36, ,54,63

h. , 14 , 21 , 28

i. , 24 , 30 , 36

6. a. Find the multiples of each of the numbers 2 and 3 up to 20, then find the common multiples between them.

The multiples of 2 are:

The multiples of 3 are:

The common multiples are:

b. Find the multiples of each of the numbers 5 and 4 up to 30, then find the common multiples between them.

The multiples of 5 are:

The multiples of 4 are:

The common multiples are:

7.	a.	Find	a common	multiple	of 4 and	8
19				•		

- **b.** Find a common multiple of 7 and 3.
- c. III Find two common multiple of 6 and 9.
- d. Find two common multiples of 6 and 8.
- e. 🔝 Find two common multiples of 5 and 7.
- f. Find two common multiples of 4 and 7.
- 8. Nagwa plans to visit her grandparents every fourth day in May. Her first visit will be May 4. How many times will she visit during May?
- 9. Writing About Math Tahani takes the bus home from school every day, but it does not take her directly to her house. After the bus drops Tahani off, she must walk the rest of the way home. The bus she takes stops every 4 kilometers as it leaves the school. If Tahani lives 18 km from school, how far does she have to walk home from the bus stop?
  Draw a picture to represent your thinking.

# Challenge

- **10. a.** Find two common multiples of 2, 3 and 5.
  - b. Find two common multiples of 6,4 and 10.

# Multiple Choice Questions

#### Choose the correct answer.

1.	. The common m	nultiple for all numbers	2. 0,8,16,24 aı	re multiples of the
	is	(Giza 24) (Cairo 23)	number——	(Cairo 23
	<b>A</b> . 0	B. 1	A. 0	<b>B.</b> 8
	<b>C</b> . 2	<b>D.</b> 3	C. 16	<b>D.</b> 24
3.	The number 21	is a multiple of ————	4. 30 is a multiple	of number (Beheira 23
		[Kafr El-Sheikh 24]		
	A. 2	<b>B</b> . 3	A. 8	B. 7
	<b>C.</b> 5	D. 9	C. 6	D. 4
5.	25 is a multiple	of [Cairo 23]	6. —— is a	multiple of 5. [Giza 23]
	<b>A.</b> 5	<b>B.</b> 7	<b>A.</b> 55	<b>B</b> . 503
	C. 9	D. 10	<b>C.</b> 326	<b>D.</b> 124
7.	Which of the follo	owing is a multiple of 8?	8. Which is a com	mon multiple of 5 and 7?
		[Alex. 23]		(Ismailia 24)
	<b>A.</b> 1	<b>B</b> . 2	A. 35	B. 49
	C. 4	D. 16	<b>C.</b> 45	D. 14
9.	Which of the foll	owing is NOT a multiple	10. Which of the fo	ollowing is a common
	of7?	(Luxor 22)	multiple of 3 a	nd 4?
				(Luxor 24) (Giza 24)
	A. 42	<b>B</b> . 63	<b>A.</b> 12	B. 7
	<b>C</b> . 707	<b>D.</b> 27	C. 1	D. 2
11.	The number 36 is	s a common multiple	12. Which is NOT a	common multiple of 9
0	of	[Alex. 24]	O	l-Monofia - Sers El-Layyan 23)
	A. 9 and 5	<b>B</b> . 10 and 2	A. 18	B. 27
	<b>C.</b> 5 and 3	D. 6 and 4	<b>C.</b> 36	D. 42

L(c)s/s(o)n

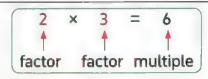
## Relationships between Factors and Multiples

Learn

What is the relation between factors and multiples?

You can use multplication to find the relation between factors and multiples. For Example:

- The numbers 1 and 6 are factors of 6
- The number 6 is a multiple of each of 1 and 6



- The numbers 2 and 3 are factors of 6
- The number 6 is a multiple of each of 2 and 3

6

From above and the opposite factor rainbow you can say that:



Factor of



Multiple of

Example

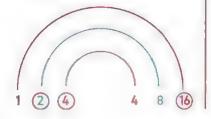
Making connection. Think about the relationships between the numbers 2, 4 and 16. Write at least two sentences describing what you notice.

Solution Y



may vary

- 2,4 and 16 are multiples of 2.
- 2,4,16 are factors of 16.
- 16 is a multiple of 2, 4 and 16.





Clives 1

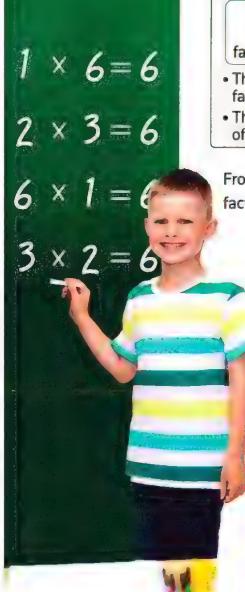
your understanding

#### Complete.

- a. 3 × 8 = 24, then 3 and 8 are of 24 and 24 is ——— of each of 3 and 8.
- b. An even number is a multiple 3 and 4. It lies between 30 and 40, then this number is

#### Notes for parents:

- Help your child use a multiplication table to recognize the relation between factors and multiples.
- Ask your child to explain the difference between a factor and a multiple.



# exercise on lesson 6

## Restor From English brets weren Foreign's and Millingbles.

•	REMEMBER • UNDERSTAND • AMPRIY & PROBLI	From the school book	
1	. Complete the following.		
	a. Write 3 multiples of 5 ———,		
	b. Write 3 multiples of 6 ————,——		
	c. Write 3 factors of 30 ———, ——		
	d. The numbers 1, 3, 9, 27 are factors of	f [EI	-Beheira – Kafr El-Dawwar 22)
	<ul> <li>e. If 4 × 9 = 36, then is a multiple and are factors.</li> <li>f. If 7 × 3 =, then is a notation.</li> </ul>	tors of the number ——	
2.	Answer the following questions.		
	a. Is 2 a factor of 12?	<b>b.</b> Is 6 a factor of	24?
	c. Is 14 a multiple of 7?	d. Is 10 a multipl	e of 2?
	e. Is 24 a factor of 8?	f. Is 2 a multiple	of 4?
	g. Is 0 a multiple of 9?	h. Is 16 a multiple	e of 3? ——————
	i. Is 5 a factor of 25 or a multiple of 25?		
	j. Is 32 a factor of 8 or a multiple of 8? —		
	k. Is 1 a factor of 9 or a multiple of 9?		
	l. What multiple of 7 is a factor of 7? ——		
3.	Making Connections. Think about the re	elationships between the	numbers in each group.
U	Write at least two sentences describing w		
	a. 🕮 3,6 and 12 ———————————————————————————————————		

- b. 4,8,16 and 24 -
- c. 2,4,3,12 -
- 4. Multiples Riddles. Read each riddle and solve. There may be more than one answer.
  - a. The number is an odd number. It is a multiple of 3 and 5. It is greater than 20. What number is it?
  - b. .... The number is an even number. It is a multiple of 4 and 8. It is between 10 and 20. What number is it?
  - c. The number is an even number. It is a multiple of 3, 4 and 6. What number is it?
  - d. An even number between 20 and 30. Some of its factors include 1, 2, 4, 7 and 14. What is it? [Suez 22]

# Challenge

5. There is a number between 10 and 20 and it is a multiple of the number 4 and a factor of the number 24. What is this number?



# Multiple Choice Questions

#### Choose the correct answer.

1	The Common factor of all numbers  + The Common multiple of all numbers	2. All the multiples of 2 are numbers.			
	A. Zero B. 1 C. 2 D. 10	A. even B. odd C. prime			
3.	The even number which is a multiple of 3,4,5 together is [Aswan 23]  A. 60  B. 18	4. —— is an odd number that is a multiple of 3 and 7.  A. 7 B. 14			
	C. 28 D. 12	C. 21 D. 42			
5.	<ul><li>Which of the following is true?</li><li>A. 5 is a multiple of 10</li><li>C. 5 is a factor of 10</li></ul>	<ul><li>B. 10 is a factor of 5</li><li>D. 6 is a multiple of 4</li></ul>			
6.	<ul><li>Which of the following is false?</li><li>A. 282 is a multiple of 2</li><li>C. 3 is a factor of 24</li></ul>	<ul><li>B. 0 is a multiple of 7</li><li>D. 8 is a factor of 14</li></ul>			
7.	The correct relation between the two numbers A. 6 is a factor of 18  C. 18 is a factor of 6	Ders 6 and 18 is (Cairo - El-Salam 23)  B. 6 is a multiple of 18  D. 18 is the twice of 6			
8.	Which of the following statements determined and 49 is correctly?  A. 7 is a multiple of 49  C. 49 is a factor of 7	ine the relation between the two numbers  [El-Beheira 24] [El-Monofia 24] [Cairo - El-Salam 23]  B. 7 is a factor of 49  D. 7 equals 9 times 49			
9.	Which of the following statements determined and 36 incorrectly?				
	A. 6 is the multiple of 36  C. 6 is a factor of 36	<ul><li>B. 36 is a factor of 6</li><li>D. 36 equals 5 times 6</li></ul>			

#### **Unit Six Assessment**



_			
4	Choose the		CHECKLOSE
JL a	Linuose ine	COLLECT	answer.

The prime number between 30 and 35 is —

(Cairo 23)

- A. 31
- **B**. 32
- **C.** 33

D. 34

2. The number 8 has — factors.

[Cairo 23]

A. 2

**B**. 3

C. 4

**D.** 5

All the factors of 16 are ———

[Cairo 23]

- A. 1,16
- B. 2,4,8 C. 1,2,4,8,16
- D. 4,8,16

4. The number — is a multiple of the number 4

[El-Kalyoubia 23]

A. 3

**B.** 5

C. 18

- D. 16
- 5. The number is the common factor of all numbers.

[Giza 23]

A. 1

B. 0

C. 2

**D**. 3

6. ———is not a multiple of 6

[Alex. - El-Montaza 23]

- A. 30

C. 16

D. 24

7. \_\_\_\_\_ is a factor of 72

(Aswan 23)

A. 5

B. 9

C. 7

D. 11

#### 2. Complete.

The common factor for all numbers is —

(Ismailia 24) (Cairo 23)

- 2. \_\_\_\_\_ is the common multiple for all numbers. [Alex. 24] [El-Monofia Sadat 23]
- The number of factors of a prime number is —

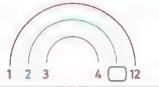
[El-Menia - Samlout 22]

4. The only even prime number is ———

[El-Sharkia 22]

5. The G.C.F of 15 and 25 is ———

- [Kafr El-Sheikh 24]
- 6. The smallest odd prime number is ————
- [El-Beheira Kafr El-Dawwar 22]
- 7. A number that has only two factors and their sum of 8 is \_\_\_\_\_\_ [Aswan Kom Ombo 22]
- 8. The missing factor in the opposite factor rainbow



(Luxor 22)

#### Choose the correct answer.

1. Which of the following is a multiple of 7?

[Giza 24]

A. 21

**B**. 50

C. 47

D. 107

2	The numbers 1,5,	25 are factors of ——	*****	(El-Monofia 24
<b>(</b>	<b>A</b> . 5	<b>B.</b> 10	<b>C</b> . 15	<b>D</b> . 25
3.	The number 40 is	a common multiple o	f	(Alex. 24
0	A. 6 and 4	<b>B.</b> 3 and 2	<b>C.</b> 5 and 4	<b>D.</b> 8 and 9
4.	Which of those nu	mbers is not prime?		[Alex. 24]
U)	A. 7	<b>B</b> . 21	<b>C</b> . 17	D. 19
5.	The multiple of 4 i	s ———		[Giza 23]
O	A. 1	<b>B</b> . 2	<b>C</b> . 3	D. 4
6.	The number 7 has	factors.		(Cairo 23)
<b>9</b>	A. 1	<b>B.</b> 2	<b>C</b> . 3	D. 4
7.	Which of the follow	ving is a prime numbe	er?	[Cairo 23]
	<b>A</b> . 10	<b>B.</b> 15	C. 17	<b>D</b> . 12
1.	An even number bo	etween 20 and 30 , so The number is	me of its factors includ	e : 1, 2, 4, 7 and 14 (Giza - Awseem 23)
2.	Find all factors of 3	30 and create a factor i	rainbow and T-chart.	
3.	Find the multiples multiples betweer		rs 8 and 12 up to 40, the	en find the common



# THEME TWO

UNIT

# Mathematical Operations and Algebraic Thinking

# Multiplication and Division: Computation and Relationships

▶ Concept 1:

Multiplying by 1-Digit and 2-Digit Factors

▶ Concept 2:

Dividing by 1-Digit Divisors



# CONCEPT

# Multiplying by 1-Digit and 2-Digit Factors



#### Lessons 1&2

The Area Model Strategy
The Distributive Property

#### Learning Objectives:

- Students will use area models to represent two-digit by one-digit multiplication.
- Students will explain how they use place value to multiply.
- Students will use an area model to multiply a one-digit number by a whole number with up to four digits.
- Students will explain the distributive property of multiplication.
- Students will apply the distributive property of multiplication to multiply a one-digit number by a whole number with up to four digits.

#### Lessons 3&4

The Partial Products Algorithm Multiply by a One-Digit Number

#### Learning Objectives:

- Students will use the partial products algorithm to multiply a one-digit number by a whole number with up to four digit.
- Students will estimate products of multi digit multiplication problems.
- Students will use the standard algorithm to multiply a one-digit number by a whole number with up to four digits.

#### ▶ Lesson 5

Multiply a Two-Digit Number by a Multiple of 10

#### **Learning Objectives:**

- Students will identify patterns when multiplying two multiples of 10.
- Students will multiply a two-digit number by a multiple of 10.
- Students will assess the reasonableness of an answer using estimation and mental math.

#### **Fast Fact**

A baby dolphin is called a calf. A calf eats 4 times each hour during the first week of life. How many times does it eat in a day during this time? Lessons

1&2

- The Area Model Strategy
- ▶ The Distributive Property



Learn

How to multiply a 1-digit number by a 2-digit number ?

Mazen has 4 boxes of crayons.

Each box holds 12 crayons.

How many crayons does Mazen have in all?

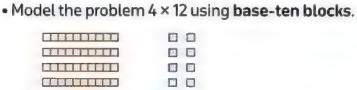
Multiply:  $4 \times 12$ 

You can use any of these ways to multiply.



#### First: Model 2-digit multiplication

• Remember that you can model 12 as



4 tens 8 ones

Then,  $4 \times 12 = 40 + 8 = 48$ **So**, Mazen has 48 crayons in all.





Model the problem 4 × 12 using the rectangle area model.



Remember -

Area of a rectangle = length × width



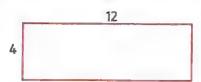


#### Notes for parents:

 Remind your child that when the number of ones blocks is 10 or greater, he/she needs to regroup 10 ones as 1 ten.

#### Step 1

Draw a rectangle where the smaller side shows 4 and the longer side shows 12.



#### Step 2

Decompose 12 using place value.

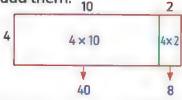
#### Step 3

Find the area of each of the new two rectangles, then add them. 10

$$-4 \times 10 = 40$$

$$•4 \times 2 = 8$$

**So,** 
$$4 \times 12 = 40 + 8 = 48$$

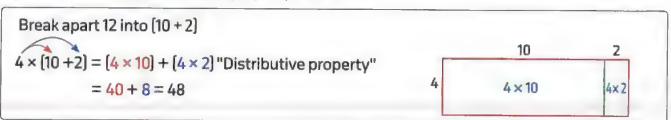


#### Third: Using the distributive property

You can use the distributive property to solve the problem  $4 \times 12$ .

The distributive property states that multiplying a sum by a number is the same as multiplying each addend by the number and then adding the products.

• To find 4 × 12 using distributive property do as follow:



### Example 1

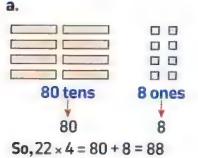
Use base-ten blocks to find each product.

a. 
$$22 \times 4$$

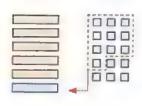
b. 
$$5 \times 13$$

#### Solution [

[A]



b.



Regroup 10 ones as 1 ten

 $50,5 \times 13 = 60 + 5 = 65$ 

While there are multiple ways to decompose a number, numbers should be decomposed using place value when using an area model for multiplication. For example, it is possible to decompose 23 in many different ways, including 17 and 6, 10 and 13, or 14 and 9. However, 23 should be decomposed into 20 and 3 when using an area model for multiplication.

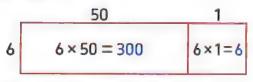
## Example 2

Draw an area model to find each product.

a.  $6 \times 51$ 

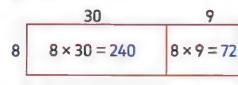
## Solution [7]

a. 51 = 50 + 1



 $50,6 \times 51 = 300 + 6 = 306$ 

- b. 39 × 8
- **b.** 39 = 30 + 9



**So**,  $39 \times 8 = 240 + 72 = 312$ 

### Example 3

Use the distributive property to solve each problem.

a.  $6 \times 324$ 

**b.** 7 × 2.915

c. 5 × 407

#### Solution

- a.  $6 \times 324 = 6 \times [300 + 20 + 4]$ =  $[6 \times 300] + [6 \times 20] + [6 \times 4]$ = 1,800 + 120 + 24 = 1,944
- **b.**  $7 \times 2,915 = 7 \times [2,000 + 900 + 10 + 5]$ =  $(7 \times 2,000) + (7 \times 900) + (7 \times 10) + (7 \times 5)$ = 14,000 + 6,300 + 70 + 35 = 20,405
- c.  $5 \times 407 = 5 \times (400 + 7)$ =  $(5 \times 400) + (5 \times 7)$ = 2,000 + 35 = 2,035

# **V** (theck)

your understanding

Solve each problem. Draw an area model to help you if necessary.

a. 7 × 29

**b.** 4 × 283

#### Notes for parents:

- Your child may incorrectly decompose the factors according to their digits rather than according to the
  value of their digits. He/She may decompose 24 as 2 and 4 rather than 20 and 4.
- Your child may get confused with how many zeros to place at the end of a product. For example, your child may write  $7 \times 2,000 = 1,400$  instead of  $7 \times 2,000 = 14,000$ . Your child may also write  $5 \times 200 = 100$  instead of  $5 \times 200 = 1,000$

# Exercise

on lessons 1&2

### The Area Model Strategy

The Distributive Property

REMEMBER

UNDERSTAND

O APPLY

ROBLEM SOLVING

From the school book

1. (II) Use a quick draw to solve each of the problems that follow.

a.  $17 \times 4$ 

**b.** 21 × 3

c.  $14 \times 5$ 

2. Draw an area model to solve each of the problems.

a.  $32 \times 7$ 

**b.** 88 × 6

c. 91×4

d.  $35 \times 7$ 

e. 249 × 5

f.  $5 \times 483$ 

g.  $7 \times 723$ 

h.  $530 \times 7$ 

i.  $4,734 \times 5$ 

j. 2,391 × 8

#### 3. Use the distributive property to solve each problem.

a.  $8 \times 35$ 

**b.** 7 × 68

c.  $2 \times 724$ 

**d.**  $3 \times 684$ 

**e.** 5 × 135

f.  $8 \times 214$ 

g. 3 × 1,476

h. 9 × 4,523

i.  $4 \times 9,035$ 

j.  $8 \times 2,560$ 

#### 4. Complete.

a. The missing value x in the model is —

20 100

[Alex. 24]

b. 246 × 5 = \_\_\_\_\_ (solve by using area model) \_\_\_\_

[Cairo 24]



[El-Monofia 24]

**d.** 
$$5 \times 467 = 5 \times 400 + 5 \times ---- + 5 \times 7$$

**e.** 
$$2 \times 139 = 2 \times ----+2 \times ---+2 \times 9$$

f. 
$$4 \times 7.346 = 4 \times ----+ 4 \times 300 + 4 \times ---+ + 4 \times 6$$

**h.** 
$$8 \times ---- = 8 \times 500 + 8 \times 90 + 8 \times 2$$

i. 
$$241 \times ---- = 6 \times 200 + 6 \times 40 + 6 \times 1$$



5. 💹 By using an area model strategy , solve the problem that	t follows.
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The route that the river bus travels is 58 kilometers long. How many kilometers does the river bus travel if it follows this route 9 times daily?

[Aswan 23]

#### 6. Answer each of the following problems. Draw an area model to help you if need.

a. Samaa bought 13 kg of apples for 6 L.E. a kg. ,find the money which she paid. [Alex. 24]

b. A candy box contains 15 pieces, how many candy pieces are in 9 similar boxes? [Cairo 24]

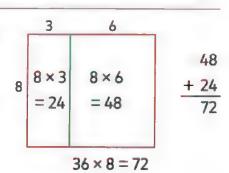
c. There are 6 people who won 145 pounds each at the fair. How much money did they win all together? [El-Kalyoubia & Ismailia 22]

d. Twenty-two passengers can fit on each river bus at a time. What is the maximum number of passengers the river bus can carry if it makes 5 trips? [Alex. - Borg El-Arab 22]

e. A city bus is 1,280 centimeters long. What is the length of 3 city buses?

7. Error Analysis. Examine the student work that follows.
Identify what the student did correctly and incorrectly,
and then try to solve the problem correctly.

A student solved the problem 36 × 8 in the following way:



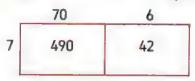
Explain your thinking.

## Multiple Choice Questions

[Cairo 23]

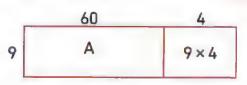
#### Choose the correct answer.

1. The opposite area model equals



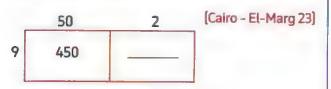
- **A**. 532
- **B.** 523
- **C.** 530
- **D**. 352

2. To multiply "64 × 9" using the opposite
area model, then A = (Cairo 24)



- A. 9×60
- B. 9+60
- C. 9×6
- D.  $9 \times 40$

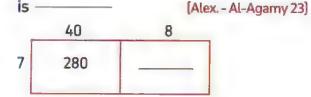
3. The opposite area model represents the product 9 × 52, then the missing value in the model is



A. 9

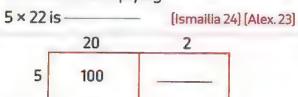
- B. 100
- C. 45
- D. 18

4. The opposite area model represents the product 7 × 48, then the missing value



- A. 28
- **B.** 78
- **C.** 56
- **D.** 15

5. In the opposite area model, the missing number of multiplying

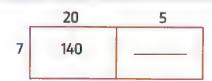


- **A.** 110
- **B**. 10

C. 7

D. 1

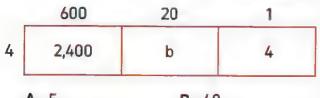
6. The opposite area model represents the product 7 × 25, then the missing value in the model is \_\_\_\_\_\_ [Giza 23]



- A. 14
- **B.** 140
- C. 35
- **D.** 350

7. In the model area, the value of b is—





- A. 5
- B. 40
- C. 80
- **D**. 90

- 8.  $8 \times 36 = [8 \times ----] + [8 \times 6]$  [Giza 24]
  - A. 3
  - B. 6
  - C. 30
  - D. 60

9. Which of the following represents  $35 \times 6$ ?

(Kalyoubia 23)

- **A.**  $[5 \times 6] + [30 \times 6]$
- C.  $(50 \times 6) \times (3 \times 6)$

- **B.**  $[5 \times 6] + [3 \times 6]$
- **D.**  $[50 \times 6] \times [30 \times 6]$

**10.**  $7 \times 526 = 7 \times [----+20+6]$ 

[Cairo 23]

A. 5

**B.** 50

**C.** 500

**D.** 5,000

**11.** (7 × 30) + (7 × 5) = ———

(Souhag 23)

- A.  $7 \times 53$
- **B.** 70 × 53
- C.  $73 \times 75$
- **D.** 7 × 35
- 12. If Mohamed rides his bicycle 13 km per day, then he covers -

- in 5 days. (Beni Suef 24)

- **A.** 5 km
- B. 13 km

C. 18 km

- D. 65 km
- 13. Bassem saves 746 pounds monthly, then how much money does he save in 9 months?
  - **A.** 6,514
- B. 6,714

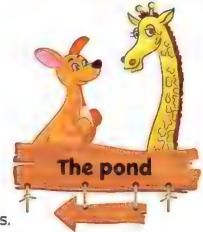
- C. 6,914
- D. 6,974



- The Partial Products Algorithm
- Multiply by a One-Digit Number

#### Learn 1 The partial products algorithm

If it takes 16 minutes to go around a pond on a boat at the zoo, how many minutes does it take to go around the pond twice?



Multiply: 16 × 2

Use the partial products algorithm as follows.



Multiply the tens.

$$\begin{array}{c}
16 \\
\times 2 \\
\hline
20 \longrightarrow [10 \times 2]
\end{array}$$

Multiply the ones.

$$\begin{array}{c|c}
16 \\
\times 2 \\
\hline
20 \\
12 \longrightarrow [6 \times 2]
\end{array}$$

Add the products.

So, it takes 32 minutes.

You can multiply the ones first, then multiply the tens as follows.

Multiply the ones.

$$\begin{array}{c}
16 \\
\times 2 \\
\hline
12 \longrightarrow [6 \times 2]
\end{array}$$

Multiply the tens.

Add the products.

#### Notes for parents:

· Your child should recognize that the commutative property of multiplication allows us to write the factors in any order.



### Example 1

Use the partial products algorithm to solve the following.

- a.  $76 \times 3$
- **b.**  $8 \times 214$
- c.  $6 \times 1{,}352$

#### Solution [V]



$$\begin{array}{c}
 76 \\
\times 3 \\
\hline
 210 \longrightarrow [70 \times 3] \text{ "Multiplying the tens"} \\
+ 18 \longrightarrow [6 \times 3] \text{ "Multiplying the ones"}
\end{array}$$

b.

c. 
$$1,352$$
 $\times$ 
 $6,000$ 
 $\longrightarrow$   $(1,000 \times 6)$  "Multiplying the thousands"

 $+1,800$ 
 $\longrightarrow$   $(300 \times 6)$  "Multiplying the hundreds"

 $+300$ 
 $\longrightarrow$   $(50 \times 6)$  "Multiplying the tens"

 $+12$ 
 $\longrightarrow$   $(2 \times 6)$  "Multiplying the ones"

 $=8,112$ 



#### your understanding

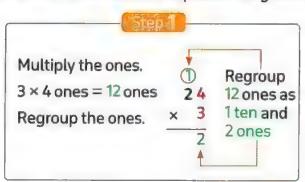
Fill in the blanks with the missing numbers to multiply.

Remind your child to line up the products carefully according to the place value.

#### Learn 2 Multiplying by a 1-digit number using standard algorithm

Find: 24 × 3

You can use the standard multiplication algorithm.



Multiply the tens.	24
$3 \times 2 \text{ tens} = 6 \text{ tens}$	v 3
, then add the	73
regrouped ten	72
6 tens + 1 ten = 7 tens	

So,  $24 \times 3 = 72$ 

You can write the products in a short way as the following examples.

## Example 2

Use the standard multiplication algorithm to solve the following.

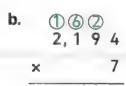
a.  $6 \times 512$ 

**b.**  $2.194 \times 7$ 

## Solution [V]

512

3,072



15, 3 5 8





your understanding

#### Find the products.

 $a. 56 \times 4$ 

b.  $3 \times 174$ 

4,015

#### Notes for parents:

- Your child sometimes has difficulty demonstrating proper regrouping when using the standard algorithm for multiplication. He/She may omit writing the digit above the correct place or he/she may attempt to place two digits at a time in the product.
- Train your child to use the short way to find the products.



### Learn 3 Estimate products - Choose a strategy

### Example 3

Esimate the product. Multiply to check.

 $\mathbf{a}$ ,  $3 \times 62$ 

#### Solution [V]



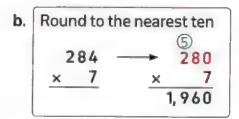
Round 62 to the greatest place value.  $3 \times 62$  $3 \times 60 = 180$ 

The actual product:

(Using the partial products algorithm)

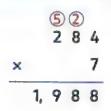
$$\begin{array}{c}
62 \\
\times 3 \\
\hline
180 \longrightarrow [3 \times 60] \\
+ 6 \longrightarrow [3 \times 2]
\end{array}$$

b.  $284 \times 7$ 



The actual product:

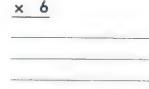
(Using the Standard Multiplication Strategy]



dheck your understanding

Estimate the product. Choose a strategy to find the actual product.

a. 87



b. 764



c. 4 × 341

- Let your child use rounding to check the reasonableness of the answer.
- Your child may has difficulty determining the number of zeros in a product when multiplying by multiples of 10. especially when the product of the basic fact ends in zero. For example, your child may think that  $80 \times 5 = 40$  rather than 4.00

## Exercise

on lessons 3&4

- The Partial Products Algorithm
- Multiply by a One-Digit Number

-	99	-		-		-	200	-
	w	м	м	-1	м	м	ы	и.
	8.0		128	Sec.	101	м	361	IB.

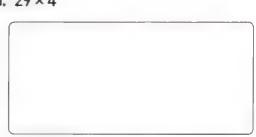
168

#### 1. Fill in the blanks with the missing numbers.

#### 2. Solve using the partial products algorithm.



b.  $29 \times 4$ 



**c.** 
$$5 \times 343$$



d. 🕮 6 × 678

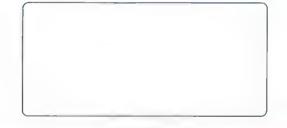
_	

e. 284 × 4	f. 305×7
g. 3 × 2,539	h. 4,731 × 4
Solve using the standard algorithm.  a. 7 × 30	b. 27×3
c. 123 × 4 [El-Menia 24]	d. 126 × 7 (El-Monofia 22
e. ≅ 630 × 5	f. 204×2

g.  $356 \times 4$ 

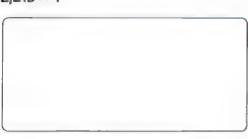
(Giza 24)

**h.**  $1,390 \times 2$ 

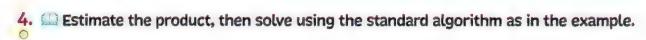




i.  $2,213 \times 4$ 

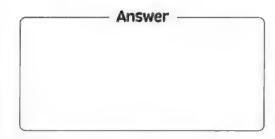






a.

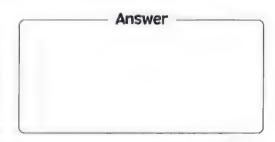
Estimate -



b.

	2.2
	32
v	- 3
^	-

**Estimate** 

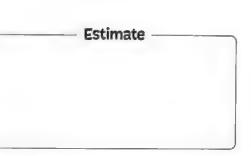


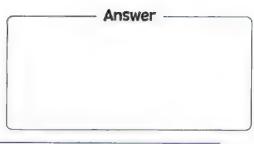
C.

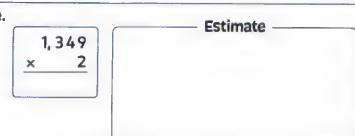
Estimate

Answer	

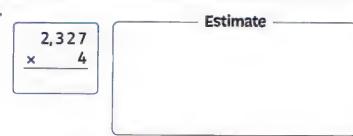
d.	
	758 × 3
<b>e</b> .	1, 34 ×
f.	2,32 ×

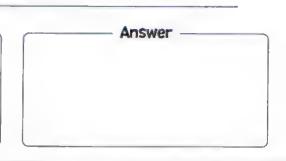






 Answer	





5.  $\bigcirc$  Three students tried solving 328  $\times$  2 using the standard algorithm. Explain who you think solved the problem correctly and identify at least one error in another student's solution.

6. Answer the following.

a. A candy box contains 15 pieces. How many candy pieces are in 9 similar boxes?

[El-Monofia 24]

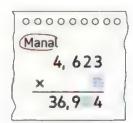
**b.** Twenty two passengers can fit on each river bus at a time. What is the maximum number of passengers the river bus can carry if it makes 5 trips?

[Cairo 23]

C.	A library has 5 shelves and each shelve has 35 books. What is the total number of			
	books in the library?	(Giza 23)		
d.	I. Ahmed bought 4 balls, if the price of each ball is 85 pounds, ho	· ·		
	pay?	(Giza - Abo El-Nomros 23)		
e.	. There are 6 people who won 150 pounds each at the fair. How r win all together?	nuch money did they [El-Monofia 24]		
f.	Mohamed bought 5 m of cloth, the price of one meter is 145 pour Mohamed pay for the cloth?	unds. How much did (Cairo 24)		
g.	. 5 people participated in an exhibition and each one of them we much money did they all win?	on 150 pounds, how (Souhag 23)		
h.	. If mass of a box is 124 kg, then find the mass of 5 boxes with the	e same mass. (El-Monofia - Sadat City 23)		
	A factory produced 4,256 toys in each month. How many toys w 3 months?	ere produced in  [Cairo - El-Marg 23]		

# Challenge

7. Find the missing numbers on Manal paper. Explain your thinking.





# Multiple Choice Questions

#### Choose the correct answer.

[Cairo 23]

[El-Menia 24]

**B.** 63

A. 192

**B**. 168

D. 83

**C.** 340

**D.** 654

#### 3. 54 0 × 7

**A.** 63

**B.** 378

**()** 

235

A. 60

**B.** 1,200

D. 368

C. 1,410

**D.** 3,192

**A.** 2,648

C. 26,480

**B.** 8,462

**D.** 2,688

6.  $504 \times 6 = -$ 

A. 324

**B.** 30,240

C. 3,240

**D.** 3,024

#### 7. The product of $192 \times 3$ is near close

to ----

8. Which product is NOT correct?

**A.** 
$$63 \times 4 = 252$$

**B.** 
$$3 \times 48 = 144$$

C. 
$$7 \times 27 = 149$$

**D.** 
$$6 \times 153 = 918$$

#### **A.** 400

**B.** 500

**C.** 600

**D.** 700

9. Which partial products can be used to solve [35 × 6]?

(El-Monofia - Sers El-Layyan 23) (Aswan - Kom Ombo 22)

A. 
$$[3 \times 6] \times [50 \times 6]$$

**C.** 
$$[30 \times 6] + [5 \times 6]$$

**B.** 
$$[30 \times 6] \times [50 \times 6]$$

**D.** 
$$[3 \times 6] + [5 \times 6]$$

#### 10. What is the ones digit of the product of $53 \times 6$ will be without solving the whole problem?

A. 3

B. 6

**C.** 8

D. 9

# Multiply a Two-Digit Number by a Multiple of 10



#### Learn 1 Multiplying two multiples of 10

Essam bought 20 statues for 30 pounds each as souvenirs, how much money did he pay?

Remember ---

The numbers 10, 20, 30, 40,... are multiples of 10.



 $20 \times 30$ 

How to find the product of  $20 \times 30$ .



- Multiply  $2 \times 3 = 6$ (Basic Fact)
- Put 00 on the right to get the number 600.

So, he paid 600 pounds.



Find the product.

a. 
$$50 \times 30$$

b. 
$$40 \times 70$$





**b.** 
$$40 \times 70 = 2,800$$



**Check** your understanding

1. Multiply: 70 × 40

2. Multiply: 80 × 90

Notes for parents:

· Let your child notice that the product has as many zeroes as the total number of zeroes in the factors plus any additional zeroes in the basic fact product.

## Learn 2 Multiplying a 2-digit number by a multiple of 10

A primary school is formed of 30 classes of 25 pupils each.

Calculate the total number of pupils.

Multiply:  $30 \times 25$ 

$$30 \times 25$$

You can use the area model.

	20	5	
30	30 × 20 = 600	30 × 5 = 150	



 $30 \times 25 = 600 + 150 = 750$ 

So, the total number of pupils is 750.

### Example 2

Multiply.

a.  $60 \times 17$ 

**b.**  $48 \times 90$ .

Solution [7]



**a.**  $60 \times 17 = 600 + 420$ = 1,020

10

7  $60 \times 10 = 600$  $60 \times 7 = 420$ 

**b.**  $48 \times 90 = 3,600 + 720$ 

=4,320

40

8

90  $90 \times 40 = 3,600$ 

60

 $90 \times 8 = 720$ 



your understanding

Multiply: 28 × 70

Work area

Let your child notice that the product of any number and a multiple of 10 has a zero in the ones place.

#### Exercise

#### on lesson 5

#### Multiply a Two-Digit Number by a Multiple of 10

ROBLEM SOLVING

..... From the school book

#### 1. Find the following products.

**p.** 30 × 22 = (Cairo - El-Salam 23)

f. 43 60 × 30 = ——

g. 11 70 × 70 = ---

| h.  $\square$  90 × 70 = \_\_\_\_\_ | i. 90 × 90 = \_\_\_\_\_

j. 7 × 20 = \_\_\_\_

(Beni Suef 24)

k. 4 × 300 = \_\_\_\_

L 32 × 100 = \_\_\_\_

[Cairo 24]

**m.** 500 × 9 = \_\_\_\_\_

(El-Monofia 24)

(Port Said 24)

**n.** 50 × 70 = \_\_\_\_\_

[Luxor 24]

o. 21 × 20 = (El-Dakahlia 22)

g. 70 × 22 = \_\_\_\_

(El-Monofia 24)

**r.**  $5 \times 3,000 = ---- \times 1,000$ 

[Alex. 24]

 $3 \times 4,000 = --- \times 1,000$ 

[Alex. 24]

**t.** ----× 70 = 3500

[El-Menia 24]

**u.** ——— × 200 = 2 × 300

#### 2. 🖾 Complete the table.

	Problem	Area Model	Numbers and symbols
a.	40 × 62		2,480
b.	70 × 55		
C.	54 × 30		
d.	40 × 78		
e.	44 × 20	_	
f.	15 × 30		
g.	10 × 40		
h.	72 × 40		

#### 3. Answer the following.

a. Mariam bought 10 books, price of each 26 pounds, find price of all books, Mariam bought. [El-Monofia 24]



**b.** A merchant bought 20 boxes of soft drinks for 40 pounds each. How much money did he pay?



c. Khaled bought 15 books, if the price of one book was 40 pounds.
What was the mount that Khaled paid? [El Menia 24]



d. A group of 52 persons want to travel by bus. Each bus ticket costs 40 pounds. How much money do they pay in all?



e. A group of 38 people want to travel by bus.
Each bus ticket costs 30 L.E. How much do they need to pay in all?



#### 4. Error Analysis.

Examine the student's work. Is his answer reasonable? How do you know? Explain your thinking.

 $22 \times 50 = (20 + 2) \times 50 = (20 \times 50) + (2 \times 50) = 100 + 100 = 200$ 

# Multiple Choice Questions

#### Choose the correct answer.

(Port Said 24)

2.  $50 \times 6 = -$ 

[Kafr El-Seikh 24]

B. 140

A. 30

B. 300

**D**. 14,000

**C.** 3,000

**D**. 3

 $\times 70 = 3,500$ 

4. 60 × 70 =

(Giza - Abo El-Nomros 23)

**B.** 35

A. 420

**B**. 4,200

**D.** 53

**C.** 42,000

**D.** 2,400

**A.** 57

6. 36 × 100 = -

(El-Menia 24)

**B.** 1,930

**A.** 36

**B.** 360

C. 273

**D**. 570

**C.** 3,600

**D.** 36,000

(Kafr El-Sheikh 24)

8. 4× -

[Kafr El-Sheikh 24]

A. 200

**B.** 20,000

A. 40

B. 60

---= 240

**C.** 2,000

**D**. 20

C. 20

**D.** 80

#### 9. $2,000 = 2 \times -$

[Kafr El-Sheikh 24]

10.  $20 \times 5 = 2 \times -$ 

(Kafr El-Sheikh 24)

**A.** 1,000

B. 100

A. 100

**B.** 50

C. 10

D. 1

**C.** 30

D. 60

#### **11.** If $3 \times 55 = 165$ , then $30 \times 550 = -6$

[El-Menia 24]

A. 165

**B.** 1,650

**C.** 16,500

**D**. 165,000

12. Mina runs 12 hours every week. What is the number of running hours in 10 weeks?

A. 12

**B.** 102

**C.** 120

D. 22

13. Mona made 10 bracelets. There are 13 beads on each bracelet. How many beads are there on all 10 bracelets?

**A.** 103

**B**. 113

**C.** 130

**D**. 1,300

# CONCEPT 2

# Dividing by 1-Digit Divisors



#### ▶ Lesson 6

**Exploring Remainders** 

#### Learning Objectives:

- Students will identify the dividend, divisor, and quotient of a division problem.
- Students will solve division problems.
- Students will explain what a remainder represents in a division problem.

#### ▶ Lesson 7

Patterns in Division

#### Learning Objectives:

 Students will use place value, multiplication facts, and patterns with zeros to divide multiples of 10, 100 and 1,000 by one-digit divisors.

#### Lesson 8

The Area Model and Division

#### Learning Objectives:

 Students will use area models to represent and solve division problems.

#### ▶ Lessons 9&10

The Partial Quotients Algorithm
The Standard Division Algorithm

#### Learning Objectives:

- Students will use the partial quotients algorithm to divide dividends with up to four digits by one-digit divisors.
- Students will estimate quotients using properties of place value and patterns in multiplication and division.
- Students will use the standard algorithm to solve division problems.

#### Lesson 11

Division and Multiplication

#### Learning Objectives:

- Students will use properties of place value to accurately record quotients.
- Students will use the relationship between multiplication and division to check the accuracy of quotients.

#### **Fast Fact**

Cheetah is the fastest land animal in the world. A cheetah can reach 112 kilometers per hour. If a cheetah ran for quarter an hour at its fastest speed, how far could it run?

#### Lesson

# **Exploring Remainders**



#### Learn

Three friends are playing a game of dominoes. There are 28 dominoes in the set. If each player receives the same number of dominoes, how many dominoes will each player get? How many dominoes will be left over?

 This problem would be solved using division. Sometimes a number cannot be divided evenly. The amount left over is called the remainder.

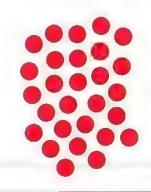


**Divide:** 28 by 3.

Write 28 ÷ 3

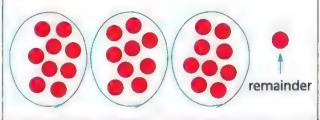


Use 28 counters



#### Step 2

Draw 3 circles. Divide the 28 counters into 3 equal groups. The counter left over is the remainder.



The quotient is 9 and the remainder is 1

Then: 
$$\frac{28}{4}$$
  $\div$   $\frac{3}{4}$  =  $\frac{9}{4}$  R1

dividend divisor quotient remainder

So, each player will get 9 dominoes. There will be 1 domino left over.

#### -Math Hint-

The sum of the digit 2 and 8 is 10 and 10 is not existing when skip counting by 3s so, there will be a remainder.

> ERROR **ALERT**

#### Note that

If the number is divided equally, the remainder is 0

Examples:  $27 \div 3 = 9 R O$ 

 $40 \div 8 = 5 R O$ 

If the remainder is greater than the divisor, keep dividing the counters evenly until the remainder is less than the divisor.

#### Notes for parents:

 Ask your what the numbers in the equation represent in the problem. Label the numbers in the equation with the correct vocabulary words.



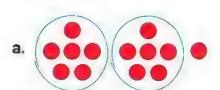
# Example 1

Find the quotient and the remainder. You may use counters to model.

- a.  $13 \div 2$
- b.  $23 \div 4$

c.  $32 \div 3$ 

Solution [V



 $13 \div 2 = 6R1$ 

Remember -Division is the inverse of multiplication

 $2 \times 6 = 12$ 

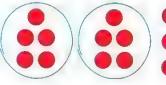
 $12 \div 2 = 6$ 

So

 $13 \div 2 = 6R1$ 

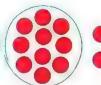
because  $13 = [2 \times 6] + 1$ 





 $23 \div 4 = 5R3$ 





 $32 \div 3 = 10 R 2$ 

Note that

The remainder is always less than the divisor.

# Example 2

There are 62 students in fourth grade in a school. Each table in the library room seats six students. How many tables are needed to seat all fourth graders?

Solution [V]



This problem would be solved using division  $62 \div 6 = 10 R 2$ 11 tables are needed [10 tables will be filled and one more table is needed for the 2 extra students  $S_0$ , 10 + 1 = 11 tables are needed.



Clina.CV

your understanding

Find the quotient and the remainder. You may use counters to model.

a.  $17 \div 5$ 

**b.**  $26 \div 6$ 

c.  $9 \div 2$ 

<sup>·</sup> Your child may be confused by having a remainder in a division problem. He/She may try to place the remainder into an existing group or into an additional group, both leading to unequal sharing.

# **Exercise**

#### on lesson 6

## **Exploring Remainders**

PROBLEM SOLVING

From the school book

1. Find each quotient and remainder. Complete the following.

2. Find each quotient and remainder.

h.  $93 \div 9 = ---$ 

3. Find each quotient and remainder. Circle all the problems which has 0 left over.

4. Complete.

**a.** In the equation 
$$315 \div 3 = 105$$
, the divisor is

a. In the equation 315 
$$\pm$$
 3 – 105 , the divisor is ————

**b.** If 
$$45 \div 5 = 9$$
, then the divisor is

c. The quotient in 
$$480 \div 10 = 48$$
 is

**d.** If 
$$35 \div 5 = 7$$
, the digit 5 is called

g. 38 ÷ 6 = ——— R 2

[Cairo 23]

h. 22 ÷ 6 = \_\_\_\_\_ R \_\_\_\_

(Luxor 24) (Kafr El-Sheikh 24)

i. 5 ÷ 4 = \_\_\_\_\_ Remainder \_\_\_\_\_

[Alex. 23]

j. 26 ÷ 5 = \_\_\_\_\_ and the reminder is \_\_\_\_\_

[Cairo 23]

- 5. Solve the following problems.
  - a. Saleem brought 15 pies to give to 4 of his friends. How can Saleem share the pies equally? What is left?
  - b. Rose has 19 biscuits to give to her 9 friends.How can Rose share the biscuits equally? What is left?
  - c. There are 48 mugs that need to be put in boxes and shipped. Five mugs can fit in each box. How many boxes will be needed to ship the mugs?
  - d. Going to a Swim Meet. The swim team is taking a bus to a swim meet. Each bus seats 40 students. Sixty students will attend the meet. How many buses are needed? Use numbers, words, and symbols to explain your thinking.

# Challenge

6. Each page of Ahmed's album holds 4 photographs. He filled all 9 pages and still had3 photos left over.

How many photos did Ahmed have to start with?

# **Multiple Choice Questions**

#### Choose the correct answer.

1. In the equation  $48 \div 6 = 8$ , the dividend

is-

(Alex. 24)

- A. 48
- B. 6

C. 8

D. 4

2. If  $20 \div 6 = 3 R 2$ , then the divisor is——

**4.** The quotient in  $162 \div 9 = 18$  is –

(Giza 24)

[El-Monofia 24]

- A. 20
- **B**. 3

C. 6

D. 2

3. If  $600 \div 10 = 60$ , then the divisor is

[Cairo 24] [El-Monofia 24]

A. 9

B. 162

- A. 1 **C**. 60
- B. 10 D. 600

- C. 18
- D. 10

5. If  $40 \div 8 = 5$ , then 5 is called —

[Kafr El-Sheikh 24]

- A. divisor
- C. quotient
- B. dividend D. remainder
- 6.  $17 \div 3 = 5 R -$
- [El-Menia 24]

**A**. 1

B. 2

C. 3

D. 4

[El-Monofia 24]

8.  $37 \div 9 = 4$  and remainder

[Cairo - Rod El-Farag 23]

A. 2 C. 1

- B. 6
- D. 3

A. 1

B. 3

- C. 4

D. 2

9.  $11 \div 3 = -$ 

(Ismaillia 23)

A. 2

B. 7

- A. 3R1 C. 3R2
- B. 4R1 D. 4R2

C. 5

D. 1

10. The reminder of dividing 37 by 5 is———

- **11.** The remainder of dividing:
  - 57 ÷ 8 equals ---

[Cairo 24]

- A. 1
- C. 3

B. 2 D. 4

- and the reminder is -
- 12. When dividing 27 by 6 the quotient is 4 (Cairo 24)

[Giza 23]

A. 6

**B.** 5

C. 4

**D.** 3

- 13. 52 pounds distributed equally among 6 friends, then the remainder ispounds. [Giza - Awseem 23]

  - A. 2

B. 4

C. 3

D. 5

- 14. If 37 oranges are distributed equally among 5 plates, how many oranges will be left? [Cairo 24] [Monofia - Berket El-Sabaa 23]
  - A. 5

B. 2

- C. 7
- **D**. 0

# Patterns in Division



Sara's family collected coins, when the jar was full, Sara's father gave the coins to his three daughters.





They counted 6,000 coins and shared them equally.

How many coins did each girl get?

Divide: 6,000 ÷ 3

Basic facts, pattern and place value can help you divide.

Use the basic fact  $6 \div 3 = 2$ 

$$6 \div 3 = 2$$

$$60 \div 3 = 20$$

$$600 \div 3 = 200$$

$$6, \underline{0} \ \underline{0} \ \underline{0} \ \div \ 3 = 2, \underline{0} \ \underline{0} \ \underline{0}$$

Three zeroes

Three zeroes

What do you notice about the pattern of zeroes?





Remember

$$6 \div 3 = 2$$

6 is called the dividend 3 is called the divisor 2 is called the quotient

**So,** each girl got 2,000 coins.

# Example 1

Use patterns to find the quotient.

a. 
$$8 \div 2 = -$$

$$800 \div 2 = -$$

$$8,000 \div 2 = -$$

#### **a.** $8 \div 2 = ------$ | **b.** $15 \div 5 = -----$

Solution [V]



- 40
  - 400 4,000
- **b.** 3
  - 30 300 3,000
- **c.** 5
  - 50 500
  - 5,000

#### Notes for parents:

- Your child may only look at the place with the highest value and try to divide. For example, with  $2,400 \div 3$ , he/she may try to solve  $2 \div 3$  instead of  $24 \div 3$ . Your child may be confused by how many zeroes to put in a quotient,
- especially when the basic fact includes a zero. For example, the basic fact for 2,000 ÷ 4 is 20 ÷ 4 = 5. The quotient is 500 since there are two other zeroes in the dividend.

# Example 2

Write the basic fact that you can use to solve these problems. Then solve each problem.

	Problem	Basic Fact	Quotient
a.	90 ÷ 3		
b.	160 ÷ 2		
c.	5,500 ÷ 5		

# Solution [V]

	Problem	Basic Fact	Quotient
a.	90 ÷ 3	9÷3=3	30
b.	160 ÷ 2	16 ÷ 2 = 8	80
c.	5,500 ÷ 5	55 ÷ 5 = 11	1,100

# Example 3

Complete each missing number.

**b.** 
$$\div 3 = 100$$

Solution 💱



a. 20

**b.** 300

c. 7

gour understanding

1. Use patterns and place value to find each quotient.

2. How can you use  $16 \div 4 = 4$  to help you find  $160 \div 4$ ?

Notes for parents:

• Make sure your child recognized that the number of zeroes in the dividend is the same as the number of zeroes in the quotient unless the basic fact has a zero in it.

# Exercise ZZ

## **Patterns in Division**

on lesson 7

REMEMBER

UNDERSTAND



ROBLEM SOLVING

From the school book

1. Use patterns and place value to find each quotient.

2. Division Patterns Label the parts in the equation using the words divisor, dividend, and quotient. Then, look for patterns to complete the remaining problems.

The first problem in the table is an example that is filled in for you.

Equation	Basic (Related) Fact	Quotient
600 ÷ 3	6 ÷ 3 = 2	200
150 ÷ 5		
1,200 ÷ 6		
200 ÷ 4		
700 ÷ 7		
6,400 ÷ 8		
4,500 ÷ 9		
270 ÷ 3		

## 3. Find each quotient.

**d.** 
$$270 \div 3 = \frac{}{}$$
 [Port Said 24]

**m.** 
$$30,000 \div 6 =$$

f. 
$$550 \div 5 =$$
 [Giza - Awseem 23]

## 4. Complete the missing numbers.

j. 
$$\div 9 = 9,000$$

m. 
$$\div 5 = 5,000$$

**e.** 
$$] \div 3 = 30$$

k. 
$$\div 3 = 8,000$$

n. 
$$\div 6 = 8,000$$

$$\div 4 = 700$$

o. 
$$\div 7 = 6,000$$

#### Solve the following problems.

a. Mrs. Farida's class is 60 minutes long. She wants to divide her class time into 3 equal periods. How long will each period be?

b. An organization donated 120 books for a school, the books is equally distributed among 12 classes, how many books in each class? [Cairo 24]

c. Bassem is reading a book of 180 pages. If he reads 9 pages per day, how long will it take him to finish the book?

d. At a primary school, the students collected 3,000 pounds as a donation to kids Hospital. Each student donated 5 pounds. How many students donated?

#### e. A Riding the Metro

There are 8,100 people that need to get to work on Monday morning at 7:00 a.m. They all want to take the metro to work. There are 9 cars on each metro. If 90 people can fit in each car, can all the people take the same metro to work? Explain your thinking using numbers, words and symbols.

# Challenge

6. A class wants to plant 450 flowers for Earth Day, in equal rows. If they plant 50 rows, how many flowers are in each row?

# **Multiple Choice Questions**

#### Choose the correct answer.

A. 4

C. 400

**D**. 160

A. 9

C. 710

B. 71

D. 90

[Alex. 23]

C. 90

A. 9

B. 19

D. 80

**4.** 480 ÷ 4 = \_\_\_\_

A. 140

C. 120

El-Monofia 24)

B. 210

**D**. 100

(Cairo - El-Nozha 23)

A. 101

C. 110

**B**. 100 D. 11

6.  $3,000 \div 3 = -$ 

A. 1

**C.** 100

**B**. 10 **D**. 1,000

[Giza 24]

**A.** 500

**B.** 400

C. 60

**D.** 40

8.  $4,500 \div 5 = -$ 

[El-Menia 24]

A. 9

B. 90

C. 900

**D.** 9,000

#### 9. $4,000 \div 8 = -$

A. 5

C. 500

**B**. 50

**D.** 5,000

[Alex. 24]

**10.**  $24,000 \div 4 = -$ 

El-Menia 24

A. 60

**B.** 600

C. 6,000

**D**. 60,000

## **11.** 320 ÷ —

A. 8

C. 800

**B**. 80

D. 8,000

**12.**  $\div$  7 = 300

A. 21

B. 210

C. 2,100

**D.** 21,000

#### **13.** 63 tens $\div$ 7 = --- tens

A. 9

B. 90

C. 900

**D.** 9,000

hundreds  $\div$  5 = 20 tens

A. 1

**B**. 10

C. 100

**D.** 1,000

8

# The Area Model and Division



Bassem's family drove 615 kilometers in 3 days. They drove the same number of kilometers every day.

How many kilometers did they drive per day?

**Divide**: 615 ÷ 3

You can use an area model for division.



Draw a long rectangle and write 3 on the smaller left side of the rectangle.

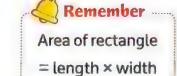
3



## Cian 2

Since  $3 \times 200 = 600$ , then 600 is a multiple of 3 which is the divisor in this problem.

Draw a vertical line inside the rectangle. Write  $3 \times 200 = 600$  inside the section of the model and 200 underneath.



#### Clap 3

Since  $3 \times 5 = 15$ , then 15 is a multiple of 3 which is the divisor in this problem. Write  $3 \times 5 = 15$  inside the empty section of the model and 5 underneath.

$$3 \times 200 = 600$$
  $3 \times 5 = 15$   $200$   $5$  R 0

#### Notes for parents:

• Your child may get confused with how many zeroes to place at the end of a product. For example, he/she may write  $7 \times 3,000 = 2,100$  instead of  $7 \times 3,000 = 21,000$ . Your child may also write  $4 \times 500 = 200$  instead of  $4 \times 500 = 2,000$ 





Check your answers and there is no left over.

Add the areas: 600 + 15 = 615

R 0 (no remainder)

Add the sides: 200 + 5 = 205

then:  $615 \div 3 = 205$ 

They drove 205 kilometers per day for 3 days.



# Example

Draw an area model to solve each problem.

a. 
$$69 \div 3$$

# Remember

Check the left over in each problem.

# Solution [V

a. Think: 
$$69 = 60 + 9$$

Add the areas: 60 + 9 = 69 R O (no remainder)

Add the sides: 20 + 3 = 23

So,  $69 \div 3 = 23$ 

**b.** Think: 825 = 800 + 25, 25 = 24 + 1

Add the areas: 800 + 24 + 1 = 825

Add the sides: 200 + 6 R1 = 206 R1

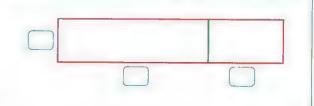
So,  $825 \div 4 = 206 R1$ 

So,  $3,600 \div 6 = 600$  [no remainder]

your understanding

Use the area to model the following problem.

 $535 \div 5$ 



· Your child may have difficulty determining which multiples to use to start decomposing a dividend when using an area model. It is most effective and efficient to start with multiplying the divisor by 10, 100 or 1,000. For example, for 256  $\div$  8, it is helpful to begin with 8 × 10 = 80 and to work up to 256.

# Exercise

on lesson 8

# The Area Model and Division

• REMEMBER

UNDERSTAN	n	
O UNDERSTANT		

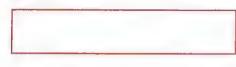


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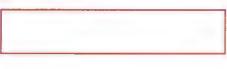
From the school book

1. Use the area model to solve each of the following.





**b.** 
$$85 \div 4$$

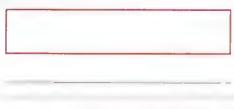


c. 
$$217 \div 5$$

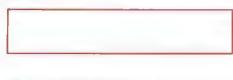


**d.** 
$$159 \div 3$$





f. 
$$484 \div 8$$



2. Use the area model to solve the problems. Show your work.

	Sylvia is sharing her muffines. If she shares 63 muffines among 3 groups of people, what is the share of each group?
).	An organization donated 89 books to a school. The books will be shared among 6 classrooms. How many books will each classroom get?
	Rashida saved 545 L.E. to buy a toy car. She did this by saving 5 L.E. every day she worked around her neighborhood. How many days did she have to work to save enough money to buy a toy car?
	Amir bought a book of stickers. There were 92 stickers in the book. He wanted to give them to 4 of his friends. How many stickers will each of his friends get?
	Writing About Math. There are 492 cars that need to park at the stadium.  The stadium has 4 parking lots. The stadium wants the same number of cars to park in each lot. How could you use the previous problem to help you solve 492 ÷ 4?  Use words, numbers and symbols to explain your thinking.

# Multiple Choice Questions

#### Choose the correct answer.

- 1. In the opposite area model, which choice best represents the problem?
  - **A.**  $515 \div 5$
- **B.**  $502 \div 5$
- **C.**  $512 \div 5$
- **D.**  $517 \div 5$

- 5 5 × 100 = 500 5 × 3 = 15 100 3 R2
- 2. Using the following area model, the quotient equals —
- [El-Monofia Berket El-Sabaa 23]

- **A**. 545
- B. 109
- **C.** 100
- D. 9

- 3. Which number best completes the area model to find 148 ÷ 6?
- The value of? is -
  - **A.**  $6 \times 2 = 12$
- **B.**  $6 \times 20 = 120$
- C. 20 + 4 = 24
- **D.** 20+4+2=26
- 6 ? 6 × 4 = 24 20 4 R4
- 4. Maha use the opposite model of rectangle area to find the result of  $369 \div 3$ , then M = \_\_\_\_

3

- **A.** 123
- **B**. 9
- 100 20
- 3
- [Cairo El-Salam. 23]

**C**. 3

- **D.** 396
- 300 60 M

- 5. 312 ÷ 3 = \_\_\_\_
- (Giza 23)
- 6. 606 ÷ 6 = \_\_\_\_

[Alex. 23]

A. 14

**B**. 13

- **A.** 101
- B. 11

- **C.** 401
- **D**. 104

- **C.** 100
- **D**. 16

- 7. 963 ÷ 3 = \_\_\_\_
- [Beheira Hosh Essa 23]
- 8. 240 ÷ 4 = \_\_\_\_
- [Beheira 23]

- A. 321
- **B.** 333

A. 6

**B**. 60

- **C**. 222
- D. 111

- **C**. 8
- **D**. 40

9. 202 ÷ 2 = \_\_\_\_

[Alex. 24]

A. 2

B. 1

C. 101

- D. 10
- 10. A chicken farmer uses egg cartons made from recycled material. If 6 eggs fit into each carton, how many cartons will he need for 312 eggs?
  - A. 50 cartons
- B. 51 cartons
- C. 52 cartons
- D. 53 cartons

# Lessons 9&10

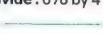
- The Partial Quotients Algorithm
- The Standard Division Algorithm

# Learn 1 The partial quotients algorithm

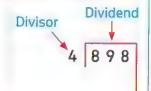
Bassem packs the cakes in groups of 4 to sell in his market.

If an order calls for 898 cakes, how many packages will Bassem need?

Divide: 898 by 4



1. Draw a line as shown in the figure.



2. Look at the dividend, start from the left there are 8 in the hundreds place = 800

4 8 9 8

• 800 is a multiple of 4 because  $4 \times 200 = 800$ 

4 8 9 8 200

 Then write 200 to the right of the line [part of the quotient].

> 3. Write 800 under the dividend and subtract from 898, you will get 98.

4. Write a multiple of 4 that is under 98 and subtract [note  $4 \times 10 = 40$ ], then write 10 to the right of the line as a part of quotient.

## Notes for parents:

· Remind your child to start division from the left.

5. Repeat writing a multiple of 4 under 58 and subtract [note  $4 \times 10 = 40 < 58$ ] and write 10 as a part of quotient to the right of the line.

6. Write a multiple of 4 that is close to 18 [note  $4 \times 4 = 16 < 18$ ], then write 16 under 18 and subtract and write 4 as a part of quotient to the right of the line.

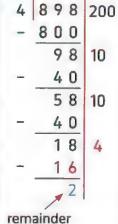
• Then the quotient = 
$$200 + 10 + 10 + 4$$
  
=  $224$ 

• Then  $898 \div 4 = 224$  and the remainder = 2

inder=2

#### Note that

4 does not divide 898 equally because there is a remainder = 2



#### **Notes**

- Always the remainder must be less than the divisor.
- The dividend = divisor × quotient + remainder



# Example 1

Divide.

a.  $78 \div 6$ 

**b.**  $658 \div 3$ 

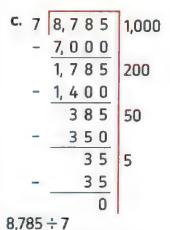
c. 8,785 ÷ 7

## Solution [V]



**b.** 3 6 5 8 200

$$78 \div 6 = 10 + 3 = 13$$
  $658 \div 3 = 200 + 10 + 9 = 219$  and the remainder = 1



$$= 1,000 + 200 + 50 + 5 = 1,255$$

#### Notes for parents:

Your child may use any multiple of divisor to divide.

# Learn 2 Estimating quotients

- Sometimes you only need to find an estimation.
- One way to estimate quotients is to substitute numbers that make mental math simpler.

#### For Example:

To estimate the quotient of 257 + 6, do as follows:

# First

The dividend 257 is between 240 and 300.

[Note: 240 and 300 are multiples of the divisor 6].

# Second

 $240 \div 6 = 40$  and  $300 \div 6 = 50$ 

So, the quotient of  $257 \div 6$  is between 40 and 50.



# Example 2 —

Estimate the quotient of 63 ÷ 4

# Solution [V]



The dividend 63 is between 40 and 80.

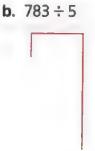
- , then  $40 \div 4 = 10$  and  $80 \div 4 = 20$
- , then the quotient is between 10 and 20.



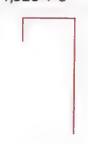
your understanding

- 1. Use the partial quotient algorithm to divide.
  - a.  $52 \div 3$





c.  $7,320 \div 6$ 



- 2. Estimate each quotient.
  - a.  $37 \div 4$

**b.**  $587 \div 2$ 

C.	762	÷	9

- · Discuss the purpose of rounding versus using basic facts to estimate by asking your child which method makes the problem easier to calculate mentally. Demonstrate how using a basic fact makes estimating easier for 257 ÷ 6 by having your child try to find each of these quotients mentally: 300 ÷ 6, 240 + 6.
- Make sure your child use basic facts and place-value pattern to divide.

# Learn 3 The standard division algorithm

Students in the third, fourth and fifth grades made 525 origami animals to display in the library. If each grade made the same number of animals, how many animals did each grade make?

**Divide**: 525 ÷ 3

or 3 5 2 5



Origami animals

Origami is the Japanese art of folding paper into different shapes.

#### Step 1

Divide the hundreds.

#### Step 2

Bring down the tens. Divide the tens.

Bring down the tens.

Divide 22 ÷ 3

Multiply 7 × 3

Subtract 22 – 21

Compare 1 < 3

#### Step 3

Bring down the ones. Divide the ones.

Bring down the ones. Divide 15  $\div$  3

Multiply 5 × 3

Subtract 15 – 15

Compare 0 < 3

# Remember ----

After you divide the hundreds, tens or ones place, the remainder should always be less than the divisor.

Check Multiply

3 × 175 = 525
The product
equals
the dividend

So, each grade made 175 origami animals.

# Other Examples:

#### a. With a remainder

#### b. Zero in the dividend

# MATH IDEA

The order of division is as follows:

Divide Multiply Subtract Compare Bring down

Repeat this order until the division is complete.

#### Notes for parents:

 To help your child remember all steps in the division algorithm, let him/her use the following memoric or make up one of his/her own: Don't Make Silly Careless Blunders (Divide. Multiply. Subtract. Compare. Bring down).

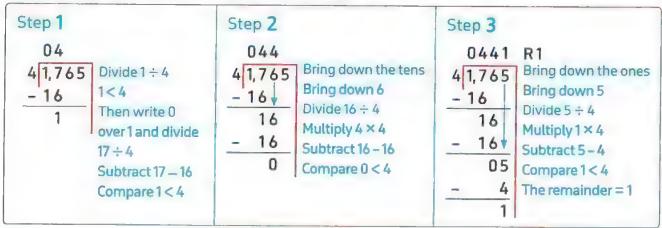
# Example 3

Divide: 1,765 ÷ 4

# Solution [V]



Steps: Divide, multiply, subtract, compare, bring down.



Then,  $1,765 \div 4 = 441 R 1$ 

# Example 4

Divide: 432 ÷ 4

# Solution W



[Zero in the quotient]

#### Step 1

Divide the 4 hundreds.

#### Step 2

Bring down the 3 tens. Divide the 3 tens.

$$\begin{array}{c|c}
10 \\
4 \overline{)432} \\
-4 \overline{)} \\
03 \\
-0 \\
\hline
\end{array}$$
3 < 4

so write a 0 in the quotient.

## Step 3

Bring down the 2 ones. Divide the 32 ones.

Then,  $432 \div 4 = 108$ 



your understanding

Divide.

a.  $525 \div 5$ 

**b.**  $685 \div 4$ 

- Remind your child of the division algorithm: divide, multiply, subtract, compare and bring down.
- · Remind your child of including the remainder as a part of the answer.

# Exercise on lessons 9&10

- The Partial Quotients Algorithm
- The Standard Division Algorithm
- REMEMBER

	111	u	1	CI	0	e	TI	1.3	j	n
•	Ψī	ч	2 :	Ţ	1	J	10	VS	3	D.





... From the school book

1. Use the partial quotient algorithm to divide.















2. Complete to estimate the quotient.

The dividend 68 is between 40 and 80, then  $40 \div 4 = 40$ ,  $80 \div 4 = 40$ , then the quotient is between — and

b. 📖 457 ÷ 3

> The dividend 457 is between 300 and 600, then  $300 \div = =$ ,600 ÷ \_\_\_\_ = \_\_\_

, then the quotient is between — and — and —

 $87 \div 2$ 

The dividend 87 is between — and — , then —  $\div$  2 = —

, —— ÷ 2 = ——

, then the quotient is between — and —

# 3. Estimate each quotient.

#### 4. Copy and complete.



a.

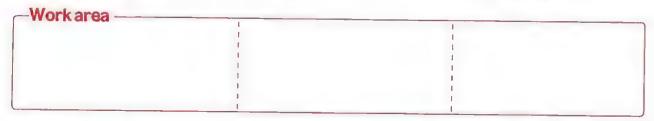
b.

 C.

R1

d.

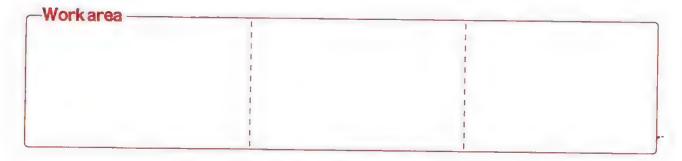
# 5. Solve the problems using the standard algorithm.



[Alex. - Al-Agamy 23]

ork area ——	E .		
	1	1	
	1	1	
	1	1	
	1	1	
	1	1	
	1	1	
	1	1	
	1	1	
	1	1	
	1	1	

**h.** 
$$1,304 \div 4$$



j.  $3,650 \div 5$ 

 $k. 1,500 \div 5$ 

 $1.2,385 \div 5$ 

[Cairo - El-Marg 23]



- 6. Amgad has 84 stickers. He distributed them equally among 7 of his friends. What is the share of each one? [Cairo - El-Nozha 23]
- 7. The school administration distributed 625 students equally into 5 floors. What is the number of students in each floor? [El-Menia 24]
- 8. A runner covers 824 meters in 4 hours. Calculate the distance he covers in one hour.

(Ismaillia 23)

The number of pupils in a school is 963 divided equally among 3 floors. How many pupils in each floor? [Kafr El-Sheikh 24]

10. A group of tourists are taking a tour of Alexandria. There are 172 tourists and 8 tour guides in the group. They want to travel to the pyramids in microbuses. Each microbus holds 9 people. How many microbuses will they need in order to get all of them to the pyramids? [Aswan 23] 11. A train has 784 seats for passengers. If there are 7 cars on the train and each car has the same number of seats , how many passengers can sit in each car?

Solve the problem using at least two different strategies.



12. Ayman has 2,532 pounds, he divided them equally between his 3 friends, find the share of each of them. [Cairo 24]

# Challenge

13. Youssef divided a number between 55 and 60 by 5. The remainder was 4. What number did Youssef divide?



# Multiple Choice Questions

#### Choose the correct answer.

division form.

$$-\frac{180}{43}$$

2.  $515 \div 5 = -$ 

(Cairo 23)

6. 
$$125 \div 5 = -$$

8. 
$$147 \div 7 = -$$

**10.** 
$$357 \div 3 = -$$

# 11

# **Division and Multiplication**

# Learn

# The relation between multiplication and division

There are 736 crayons wanted to be divided among boxes. Each box holds 4 crayons. How many boxes are needed?

**Divide**: 736 ÷ 4

Estimation can help decide whether an answer is reasonable. Division can help solve the problem.

Multiplication can help check the answer.



#### Known that

Multiplication and division by the same number are opposite operations or inverse operations. One operation undoes the other,

## First Estimate the quotient

The dividend 736 is between 400 and 800

#### - Note that -

400 and 800 are multiples of 4

**Then**:  $400 \div 4 = 100$  and  $800 \div 4 = 200$ 

So, the quotient is between 100 and 200



4	7	3	6
	4	¥	
	3	3	
	3	2	-
		1	6
_		1	6
		0	0

## Second Divide 736 ÷ 4

The number of boxes =  $736 \div 4$ = 184 boxes

The answer is reasonable.

## Third Multiply to check

 $184 \times 4 = 736$ 

So, the needed boxes are 184 boxes.

#### Partial strategy

	1	8	4
×			4
		1	6
+	3	2	0
+	4	0	0
	7	3	6

#### Notes for parents:

· Ask your child to tell you what is the relation between multiplication and division.

# Example 1

Write the division problem that matches the multiplication problem.

a. 34

b.

30

Solution 🕎



a. 
$$68 \div 2 = 34$$

**b.** 
$$1.554 \div 3 = 518$$

c. 
$$6,356 \div 7 = 908$$

# Example 2

Write the division problem that matches the multiplication problem.

a. 
$$14 \times 2 = 28$$

**b.** 
$$161 \times 5 = 805$$

c. 
$$105 \times 7 = 735$$

**d.** 
$$320 \times 6 = 1,920$$

Solution [V



a. 
$$28 \div 2 = 14$$

**b.** 
$$805 \div 5 = 161$$

c. 
$$735 \div 7 = 105$$

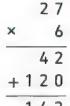
**d.** 
$$1,920 \div 6 = 320$$



your understanding

Write the division problem that matches the multiplication problem.





#### Notes for parents:

 Ask your child to explain how can he/she uses the relation between multiplication and division to solve multiplication and division problems.

# Division and Multiplication

on lesson 11

REMEMBER

● UNDERSTAND ( APPEY

PROBLEM SOLVING

From the school book

1. Write the division problem that matches the multiplication problem.

a.

7		
	_	
4	_	

C.

d.

2. Write the division problem that matches the multiplication problem.

C.

93

e.

+

g.

9

=

3. Place Value and the Quotient : First, circle the problems you think will have a quotient with fewer digits than the dividend. Then, estimate the quotient and solve each problem using the standard algorithm for division. Think about where to place the first digit in the quotient.

a. 834÷3	<b>b.</b> 346 ÷ 5
The quotient is between ———and ———	The quo
Solution:	Solutio
c. 562 ÷ 8	d. 1,266 ÷ 8
The quotient is between ———and ———	The quo

	The quotient is between ———and ———	The quotient is between ———and ———
	Solution:	Solution:
c.	562 ÷ 8	d. 1,266 ÷ 6
	The quotient is between ———and ———	The quotient is between ———and ———
	Solution:	Solution:
e.	1,429 ÷ 7	f. 4,590 ÷ 3
	The quotient is between ———and ———	The quotient is between ———and ————
	Solution:	Solution:

4. Solve the following problems. You may use multiplication to check your answer.

**b.**  $219 \div 3 =$ 

**h.** 
$$3,017 \div 3 =$$



#### Choose the correct answer.

1. If  $73 \times 8 = 584$ , then  $584 \div 8 =$ 

[Giza - Abo El-Nomros 23]

A. 78

**B**. 73

**C.** 83

D. 87

2. The division equation that matches

$$126 \times 3 = 378 \text{ is}$$

- **A.** 378 3 = 126
- **B.** 378 + 3 = 126
- **C.**  $378 \div 3 = 126$
- **D.**  $378 \times 3 = 126$

- Which expression can be used to check the solution of the opposite division problem?
- 9 2 5 6 - 1 8 \ 7 6 - 7 2

28R4

- A.  $28 \times 9$
- **B.** 28 × 256
- C.  $28 \times 9 + 4$
- **D.**  $28 \times 256 + 4$
- 4. In the problem 1,866 ÷ 6, the quotient is between ———— and ————
  - **A.** 100 and 200
  - B. 200 and 300
  - C. 300 and 400
  - D. 400 and 500

- 5. What is the value of ? in the opposite division problem?
  - **A**. 73
  - **B**. 73 R1
  - **C.** 73 R 2
  - **D.** 73 R 3

4292 -28 v 12 - 12

- 6. 48 ÷ 7 = -
  - A. 6R4
- B. 6R5
- C. 6R6
- D. 7R1
- 7. 320 ÷ 4 =
  - A. 80
- **B.** 90
- C. 80 R 3
- **D.** 90 R 3

- 8. 2,014 ÷ 2 = \_\_\_\_\_
  - **A.** 17

**B.** 107

**C.** 1,007

**D.** 10,007

- 9. 2,748 ÷ 9 = \_\_\_
  - A. 304R2
- **B.** 304 R 3
- C. 305 R 2
- **D.** 305 R 3

# **Unit Seven Assessment**



#### 1. Choose the correct answer.

1. If 37 oranges are distributed equally among 5 plates, how many oranges will be left?

[El-Monofia - Sers El-Layyan 23]

**A**. 5

**B**. 2

**C**.7

**D**. 0

2. Which partial product can be used to solve  $35 \times 6$ ?

(Souhag 23)

 $A. (3 \times 6) \times (50 \times 6)$ 

**B.**  $(30 \times 6) \times (50 \times 6)$ 

**C.**  $[30 \times 6] + [5 \times 6]$ 

**D.**  $[3 \times 6] + [5 \times 6]$ 

3. In the equation  $6 \times b = 42$ , then b = -

[Alex. 23]

**A**. 8

**B**. 5

**C**. 6

**D**. 7

4. The quotient of dividing 922 by 3 is ——— ar

and the remainder is 1. [Cairo - Heliopolis 23]

A. 37

**B.** 703

**C.** 307

**D**. 76

**5.** 505 ÷ 5 = \_\_\_\_\_

(Cairo 23)

A. 100

**B**. 110

C. 101

D. 111

6. 125 × 5 = ----

(Cairo 23)

A. 625

**B.** 130

**C**. 605

**D**. 505

7. If  $50 \div 10 = 5$ , then the divisor is —

[El-Behiera - Hosh Essa 23]

A. 40

B. 5

C. 10

**D**. 50

#### 2. Complete the following.

- 1. 4 × 372 = 4 × \_\_\_\_\_ + 4 × \_\_\_\_\_ + 4 × \_\_\_\_\_
- 2. 80 × 50 = \_\_\_\_
- 3. If 2,166  $\div$  6 = 361, then the divisor is , the dividend is and the quotient is —

3

- 4. = 30 = 2,700
- 5.  $7 \times - = 7 \times 600 + 7 \times 50 + 7 \times 3$
- 6. If  $641 \times 7 = 4,487$ , then  $4,487 \div 7 =$

[Giza 23]

7. In the opposite area model:

100 20

3

[Port Said 24]

369 ÷ 3 = \_\_\_\_\_



## 3. Choose the correct answer.

- -- × 70 = 2.800
- A. 40

C. 50

D. 60

2. The area model represents  $15 \times 6$ 

What number belongs in rectangle A?

- A. 15 **B**. 20

**C**. 30

**D**. 45

10

- 3. 4,000 ÷ 5  $2.000 \div 5$ 
  - A. >
- B. <

C. =

- 4. 45,000 ÷ --=9,000
  - A. 5
- **B.** 50

C. 500

- **D**. 5,000
- 5. Ahmed spends 6 hours in school, so if we want to calculate Ahmed's school day by

minutes we -

[El-Menia 24]

5

A

- A.6 + 60
- $B.6 \times 24$

C.6 + 24

- $D.6 \times 60$
- 6. 52 pounds distributed equally among 6 friends , then the remainder is —

[Cairo 23]

- A. 2
- B. 4

**C**. 0

**D**. 5

7.  $125 \div 5 = -$ 

(Souhag 23)

- A. 5
- **B**. 15

C. 25

D. 625

## 4. Answer the following.

1. Find the result using any strategy:

 $25 \times 3 = -$ 

[El-Menia 24]

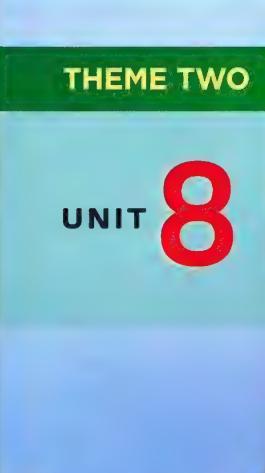
2. Use the partial quotient algorithm to divide.

 $7,425 \div 5$ 

- 3. A city bus is 1,270 centimeters long. What is the length of 4 city buses?
- 4. Mazen bought 4 books, if the price of each book is 87 pounds.

How much money did he pay?

(Ismailia 24)



Mathematical Operations and Algebraic Thinking

# **Order of Operations**

► Concept 1:
Order of Operations



# CONCEPT

# **Order of Operations**



#### ▶ Lessons 1&2

Order of Operations
The Order of Operations and
Story Problems

#### Learning Objectives:

- Students will use the order of operations to solve equations with multiple operations.
- Students will use the order of operations to solve equations with multiple operations.
- Students will write and solve an equation to represent a multistep story problem.

#### **Fast Fact**

- ▶ Rhino is one of the biggest animals in the world which can weigh a massive 2,500 kg That's the weight of 30 men! Sadly! it's estimated that there are only 29,000 rhinos left in the wild, compared to 500,000 at the beginning of the 20th century.
- ▶ Lion often known as the
  "King of the jungle".
  Lions usually live in groups of
  10 or 15 animals. A female lion
  needs 5 kg of meat a day.
  A male needs 7 kg or more
  a day.

How many kilograms do 3 females lion and 2 males need a day?

#### Lessons

# 18,2

- Order of Operations
- The Order of Operations and Story Problems

# **Learn 1** Order of operations

Find:  $6-2 \div 2$ 

- Sara solved the problem by subtracting first and then dividing. What did she get?
- Bassem solved the problem by dividing first and then subtracting. What did he get?

#### Sara

Think: 
$$6-2=4$$
  
 $6-2 \div 2 = 4 \div 2$   
 $= 2$ 

#### Bassem

Think: 
$$2 \div 2 = 1$$
  
6-2 ÷ 2 = 6-1  
= 5





There seem to be two correct answers.

When solving problems with more than one operation, you need to know which operation to do first. A special set of rules, called the order of operations, can be used to solve problems with more than one operation.

## **Order of Operations**

First, perform any operations in parentheses. Next, multiply and divide from left to right. Then, add and subtract from left to right.

So, the correct answer to  $6-2 \div 2$  is 5 and Bassem solved the problem in a correct way.

#### Notes for parents:

· Ask your child which operation comes first when solving the problems :  $12 \div (4 - 1)$  and  $6 + 4 \times 5$ .

# Example 1

Follow the order of operations to find the value of each expression.

a. 
$$[8-2] \times 6 =$$

**b.** 
$$5 + 10 \div 5 =$$

c. 
$$3 \times [4+6] =$$

d. 
$$6-4 \div 2 = ----$$

**e.** 
$$(5+3) \div 2 = ----$$

# Solution [V]

a. [8 – 2] × 6  = 6 × 6  = 36  Do what is in the parentheses first, next multiply.		<b>b.</b> 5+10 ÷ 5 = 5+2 = 7	There are no parentheses, so divide first. Then add.	
c. $3 \times (4+6)$ = $3 \times 10$ = 30	Do what is in the parentheses first, next multiply.	d. $6-4 \div 2$ = $6-2$ = 4	There are no parentheses, so divide first. Then subtract.	
e. $(5+3) \div 2$ = $8 \div 2$ = 4	Do what is in the parentheses first, next divide.	f. 14÷7×2 = 2×2	There are no parentheses, so divide and multiply from left to right.	

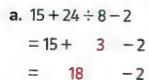
# Example 2

Follow the order of operations to find the result.

**a.** 
$$15 + 24 \div 8 - 2 = -$$

**b.** 
$$15 + 24 \div [8 - 2] = -----$$

# Solution [ ]



16

There are no parentheses, so divide,

Then add and subtract from left to right.

b.  $15+24 \div [8-2]$  Do what is in the parentheses first, = 15+4 next divide. Then add. = 19



your understanding

Use the order of operations to find the value of each expression.

**b.** 
$$[16+4] \div 2$$

c. 
$$2 \times 5 - 8 \div 4$$

• Ask your child why the values of 15 + 24  $\div$  8 - 2 and 15 + 24  $\div$  (8 - 2) are different.

# Learn 2 The order of operations and story problems

### : Read to Understand







# Example 3

Maged walked 20 kilometers every week for 3 weeks.

The next week, he walked 15 kilometers.

How many kilometers did he walk over those 4 weeks?

# Solution [V



= 60 + 15 = 75 kilometers.



Mohammed ran 8 kilometers on Saturday and twice that distance on Sunday. He ran 6 kilometers less on Monday than he did on Sunday.

How many kilometers did he run on Monday?

# Solution [ ]



What he ran =  $8 \times 2 - 6$ 

= 16 -6 = 10 kilometers.

# Example 5

There were 86 people on the pitch. 9 of them were coaches, and the rest wanted to play football. If they wanted to form teams of 11,

how many teams could they form?

# Solution [V]



Number of teams =  $[86 - 9] \div 11$ 

= 77  $\div$  11 = 7 teams.



### Note that

You should put parentheses to subtract first.





your understanding

Noha bought three books for 20 L.E. each. If she had 100 L.E., how much money was left with Noha?

# Notes for parents:

 Ask your child to read each problem carefully and plan to solve each one, then ask him/her to look back to check his/her answer.



# Exercise

# on lessons 12.2

# Order of Operations

# This Orgin of Olemanical water Mist A problem was

h. 7 + 12 × [4 + 6] = ----

i. 25-3×5+2=

j 10 + [8 × 10] - 20 =

(Cairo 23)

[Cairo 23]

(Cairo 24)

4. Find The Answer Solve each problem. Locate the correct answer and write the equation under it. If the answer is not listed, rewrite the problem under "Other".

$$2+4\times6$$

$$48 \div 4 + 9$$

$$7 + 70 \div 10 - 2$$

$$49 - 7 \times 6 + 4$$

$$8 \times 3 + 6 + 2$$

$$24 - 8 \div 4 + 6$$

$$36 \div 9 + 4$$

$$99 - 10 \times 9 + 7$$

$$12 - 72 \div 12 + 2$$

$$80 \div 10 + 6 - 3$$

$$15 \div 5 + 4 + 1$$

$$15 - 7 + 2 + 6$$

$$8 \times 2 + 24 - 12$$

$$24 \times 36 \div 6 + 2$$

$$40 - 7 \times 5 + 2$$

8

11

16

28

32

Other

5. Which Does Not Belong? Solve the problems. Then, think about which problem does not belong in the set. Highlight or circle the problem you think does not belong and explain your thinking.

a. 
$$6 \times 4 - 4 = -$$

c. 
$$60 + 20 - 50 = -$$

**b.** 
$$100 - 80 \times 1 =$$

d. 
$$2,356 - 2,336 = -$$

6. Talk About Math

Explain why the values of  $8 + 6 \div 2$  and  $[8 + 6] \div 2$  are different.

What is the value of each expression?

7. Who is Correct?

Saleem and Sarah both solved the problem  $74 - 61 + 8 \times 5$ .

Saleem says the answer is 105 and Sarah says the answer is 53. Who is correct?

How do you know? Help the person who is not correct realize his/her mistake.

# 8. W Number Talk

Solve the problems. Then, rewrite each problem more efficiently.

a. 
$$67 + 67 + 67 + 67 + 67 - 15 = -$$

**b.** 
$$568 + 78 - 4 - 4 - 4 - 4 - 4 - 4 - 4 - 4 = 4$$

# Story problems



a. Abdullah loves collecting stamps. He received 246 stamps for his birthday. He kept 25 of the stamps and now he wants to give the rest to 6 of his friends. How many stamps will each friend get if they share them equally?



- **b.** Maha walked 14 kilometers every day for 2 weeks. The next week, she walked 56 kilometers. How many kilometers did she walk over those 3 weeks?
- c. Ashraf has to take the bus to work. It takes 27 minutes to get to the bus stop near his job. Then, he has to walk for 12 minutes from the bus stop to his place of work. How many minutes does Ashraf spend going to work during a 5-day week?



- d. A group of tourists are taking a tour of Alexandria. There are 172 tourists and 8 tour guides in the group. They want to travel to the pyramids in microbuses. Each microbus fits 9 people. How many microbuses will they need in order to get everyone to the pyramids?
- **e.** Sita wants to bake berry muffins. Each muffin will have 6 berries in it. She buys 198 berries from the store. On the way home, she eats 17 of the berries. How many muffins can she make with the berries she has left?
- 10. Writing My Own Problem Write a story problem that can be represented by (50 36) ÷ 4.

# Multiple Choice Questions

## Choose the correct answer.

(El-Monofia - Sers El-Layyan 23)

- A. 14
- B. 6
- C. 1

D. 16

- 2.  $5 \times 0 \div 3 = -$
- (El-Monofia 24)

- A. 0
- C. 8

B. 5 **D.** 508

Port Said 24

- 4.  $18 \div 3 + 4 2 = -$ 
  - (Cairo El-Nozha 23)

- A. 2
- **B**. 18
- C. 180

5.  $4+10\times2-1=-$ 

D. 20

- A. 8
  - C. 2

**B**. 16 D. 0

(Souhag 23)

- 6. 2+6×4-8=-
  - [Cairo Al-Khalifa and Al-Mokattam 23]

- A. 41
- B. 27
- **C**. 23
- D. 14

A. 8

- **B.** 10
- C. 16
- **D**. 18

7.  $[25+5] \div 6 + 2 =$  [Port Said 24]

A. 8

**C.** 10

- B. 7
- D. 12

- 8.  $20 \div [4+1] \times 2 = -$
- [Ismailia 24]
- A. 22
- B. 2
- C. 8
- **D**. 12

- 9.  $9 + 2 \times [15 \div 5] = -$ [Giza 23]

A. 15

**B**. 21

C. 11

D. 18

- **10.**  $24 \div [4-1] 2 =$  [Souhag 23]
  - B. 10

A. 6 C. 24

D. 48

- 11. 5+5+5+5+5-12=
  - A.  $5 \times 6 12$
- B. 20 12
- C.  $5 \times 5 12$  D.  $5 \times 5 + 12$
- **12.** Which is the first step in evaluating
  - $18-15+3\times8-2$ ? [Ismailia 23]
  - **A**. 18 15
- **B.** 15 + 3
- C. 3×8
- D.8-2

- 13. Which of the following = 6? [Giza 23]
- 14. Which of the following = 24? (Cairo 23)

- **A.**  $3 \times 1 + 2$
- **B.**  $12 + 6 \div 3$
- **A.**  $3 \times [3+5]$  **B.**  $3 \times 3+5$

- C.  $18-3\times4$  D.  $24\div6+4$
- C.  $3+3\times5$  D.  $[3+3]\times5$

# **Unit Eight Assessment**



# 1. Choose the correct answer.

1. 12 + 8 ÷ 4 = ———

[Alex. 24]

A. 5

- B. 14
- C. 16

**D**. 15

2. 20 ÷ 4 - 3 =

(Port Said 24)

A. 20

A. 6

**B**. 5

**C**. 2

**D**. 10

- 3, 3+3×3=---
  - B. 9

C. 12

**D.** 333

4. 12 + 30 ÷ 6 =

[El-Monofia - Quesna 23]

A. 7

- **C**. 48
- D. 19

5. [8+2] ÷ 2=

- [Beni Suef 24] [Cairo El-Nozha 23]

A. 4

**B**. 5

B. 17

C. 7

D. 12

6. 10-4×2=

[El-Monofia - Sadat 23]

A. 12

B. 2

**C.** 8

- D. 6
- 7. Noha walked 10 kilometers every day for 2 weeks. The next week, she walked 60 kilometers.

  How many kilometers did she walk over those 3 weeks?
  - **A.** 1,340 km \_
- B. 200 km-
- C. 740 km
- D. 80 km

# 2. Complete the following.

1.  $14 \div 7 + 20 = -$ 

2. 5+8÷2=\_\_\_\_

3. (3+3)×4-1=

4.  $24 \div (4-1) - 3 =$  [El-Monofia 24]

5.  $100 - (4 + 7) \times 9 =$ 

[Cairo - Heliopolis 23]

6. 32 ÷ 4 - 6 = \_\_\_\_

(Giza – Awseem 23)

- 7.  $40 \div 8 3 =$
- (Giza 23)
- 8.  $15 + 20 \div 4 = -$
- [Giza 23]

# 3. Choose the correct answer.

1. 6×4-4=----

**C**. 24

[Cairo - El-Shrouk 23]

- A. 15
- **B**. 20

**D**. 64

2.  $2+5\times6=$ 

[El-Beheira 23]

A. 42

**B**. 32

C. 16

D. 60

3.  $2 \times 6 + 8 =$ 

(Cairo 24)

A. 20

**B**. 25

C. 24

D. 22

4.  $5 \times 4 + 6 = -$ 

A. 26

**B**. 25

C. 50

D. 34

5.  $24 \div 6 - 3 = -$ 

[El-Monofia 24]

A. 8

B. 1

**C**. 3

D. 9

6.  $32 - 8 \div 2 = -$ 

[Alex. 24]

A. 12

**B**. 8

**C**. 28

**D**. 16

7.  $20 \div 5 + 5 - 2 = -$ 

[Cairo 24]

A. 0

B. 7

C. 2R4

**D**. 8

# 4. Answer the following.

1. Use the order of operations to solve.

a.  $55 \div 5 + 10 - 1$ 

[El-Menia 24]

**b.**  $4 \times 10 + 25$ 

[Cairo 24]

2. Find the value.

a.  $2 \times 3 + 20 \div 5$ 

[Kafr El-Sheikh 24]

b.  $3 + 8 \div 2$ 

[Alex. 24]

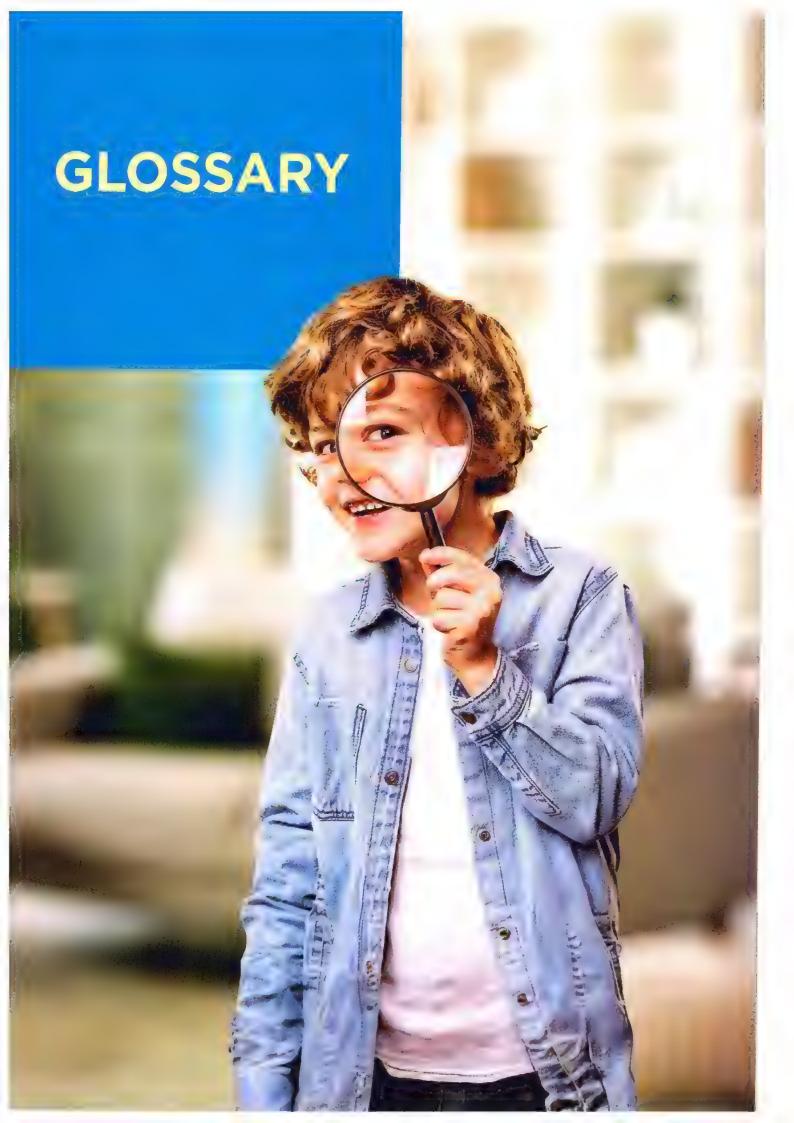
3. Mona walked 5 km. every day for 2 weeks. The next week, she walked 60 km.

How many kilometers did she walk over those 3 weeks?

4. Edward has to take the bus to work. It takes 25 minutes to get to the bus stop near his job. Then, he has to walk for 15 minutes from the bus stop to his place of work.

How many minutes does Edward spend going to work during a 5-day week?





A

a.m.

صباحًا [قبل الظهر]

A time between 12:00 midnight and 12:00 noon.

add

جمع

To combine or join together; put together two or more quantities.

addend

عدد مُضاف

Any number being added. In the equation 6 + 8 = 14, six and eight are both addends, 14 is the sum.

additive comparison مقارنة باستخدام عملية الجمع Problems that ask how much more (or less) one amount is than another.

خاصية المحايد الجمعى When you add zero to a number, the sum is that same number.

algorithm

خوارزمية

A step-by-step method for computing.

area

The measure, in square units, of the inside of a plane figure.

area model

نموذج مساحة المستطيل

A model of multiplication that shows each place value product.

array

مصفوفة

An arrangement of objects in equal rows.

# **Associative Property of Addition**

خاصية الدمج في عملية الجمع

Changing the grouping of three or more addends does not change the sum.

## **Associative Property of Multiplication**

خاصية الدمج في عملية الضرب

Changing the grouping of three or more factors does not change the product.

bar model

نموذج شريطي

A model that uses bars to represent known and unknown quantities and the relationship between these quantities.

base

قاعدة

Any side of a plane figure. Usually thought of as a side where the figure "sits".

Base Ten numerals

أرقام نظام العد العشرى

Any of the symbols 0,1,2,3,4,5,6,7,8 or 9. The symbols can represent any amount based on a place value system of grouping by tens (also known as digits).

capacity

سعة

The amount of liquid a container can hold.

centimeter [cm]

سنتيمتر (سم)

A metric unit of length equal to  $\left(\frac{1}{100}\right)$  of a meter.

common factor

عامل مشترك

Any common factor of two or more numbers. Six is a common factor of both 12 and 24.

common multiple

مضاعف مشترك

Any common multiple of two or more numbers. Six is a common multiple of both 2 and 3.

**Commutative Property of Addition** 

خاصية الإبدال في عملية الجمع

Changing the order of the addends does not change the sum.

**Commutative Property of Multiplication** 

خاصية الإبدال في عملية الضرب

Changing the order of the factors does not change the product.

compare

يقارن

To decide if one number is greater than, less than, or equal to.

compose

يكوِّن

To put together smaller numbers to make larger numbers.

Composite number

عدد غير أولى

A number greater than 0 that has more than two different factors

# **Customary system**

نظام القياس المتعارف عليه

A system of measurement used in the United States. The system includes units for measuring length, capacity, and weight. Nearly everyone else uses the metric system.

# day

يوم

The length of time it takes the Earth to make a complete rotation. 24 hours = 1 day.

# decimeter (dm)

ديسيمتر [ديسم]

A metric unit of length. 1 decimeter = 0.1 meter; 10 decimeters = 1 meter. A hand span is about 1 decimeter.

## decompose

يحلل

To separate number into two or more parts.

### determine

يعيّن

To decide or settle upon, figure out.

### difference

فرق

The amount that remains after one quantity is subtracted from another. The answer in a subtraction problem.

### digit

رقم

Any of the symbols 0,1,2,3,4,5,6,7,8 or 9. [Also known as Base Ten numerals.]

### display-

الأران

To show, exhibit or demonstrate.

### **Distributive Property**

خاصية التوزيع

When one of the factors of a product is a sum, multiplying each addend before adding does not change the product.

### divide

سم

To separate into equal groups and find the number in each group or the number of groups. 56 split into 8 equal groups equals seven in each group,  $56 \div 8 = 7$ 

# dividend

مقسوم

A number that is divided by another number. 56 is the dividend in the above example.

### divisible

قابل للقسمة

A number is divisible by another number if the quotient is a counting number without a remainder.

### divisor

مقسوم عليه

The number by which another number is divided. 8 is the divisor in  $56 \div 8 = 7$ 

# elapsed time

وقت منقض

The amount of time that has passed (also known as time interval). Six hours elapse between 8:00 am and 2:00 pm.

### equal

يساوي

Having the same value. 2 feet = 24 inches.

# equation

بعادلة

A mathematical sentence with an equal sign. The amount on one side of the equal sign has the same value as the amount on the other side. 4+3=7

### estimate

ڡٞڎڕ

To find a number close to an exact amount, an estimate tells about how much or about how many.

### expanded form

صبغة ممتدة

A way to write numbers that shows the place value of each digit, 263 = 200 + 60 + 3

# fact family

F

مجموعة حقائق رياضية ذات صلة

A group of related facts that use the same numbers (also known as related facts). Fact family for  $3,5,15:3\times5=15$ ;  $15\div5=3$ ;  $5\times3=15$ ;  $15\div3=5$ 

### factors

عوامل

The whole numbers that are multiplied to get a product.  $6 \times 7 = 42$  [6 and 7 are factors.]

### factor pairs

أزواج عوامل العدد

A set of two whole numbers that when multiplied will result in a given product.  $2 \times 3 = 6, 1 \times 6 = 6$ . The factor pairs for 6 are: 2 and 3,1 and 6

formula

قانون / قاعدة

A rule that is written as an equation.

A=l×w

gram (g)

جرام (جم)

The standard unit of mass in the metric system. 1,000 grams = 1 kilogram.

The mass of a paperclip is about 1 gram.

greater than (>)

أكبر من

Used to compare two numbers when the first number is larger than the second number.

horizontal

أفقى

Parallel to the horizon. Horizontal lines go from left to right or right to left.

hour (hr)

ساعة

A unit of time. 1 hour = 60 minutes;

24 hours = 1 day.

Hundreds

مئات

The value of a digit that is the third position from the right when describing whole number place value.

identify

יבננ

Recognize or distinguish, figure out what it is, name it.

**Identity Property of Multiplication** 

خاصية المحايد الضربي

The property that states that the product of any number and 1 is that number :  $n \times 1 = n$ 

interpret

يفسر

To explain or tell the meaning of something.

inverse operations

عمليات عكسية

Operations that undo each other. Multiplication and division are inverse operations.

 $8 \times 5 = 40$  and  $40 \div 5 = 8$ 

justify

يبرر

To show or prove to be right or reasonable.

kilogram [kg]

كيلوجرام (كجم)

A metric unit of mass equal to 1,000 grams. 1 kilogram = about 2,2 pounds.

kilometer (km)

كيلومتر [كم]

A metric unit of length equal to 1,000 meters.

length

طول

How long something is. The distance from one point to another. Length is measured in units such as centimeters, meters and kilometers. One dimension of a 2-dimensional or 3-dimensional figure.

less than [<]

أقل من

Used to compare two numbers when the first number is smaller than the second number.

line plot

مخطط التمثيل بالنقاط

A diagram showing frequency of data on a number line.

liter [L]

mass

.71

The basic unit of capacity in the metric system. 1 liter = 1,000 milliliters.

M

كتلة

The amount of matter in an object, usually measured by comparing with an object of known mass. While gravity influences weight, it does not affect mass.

حساب عقل mental math or mental calculation

Calculations that are done in a student's head without pencil and paper, calculators or other aids.

meter (m)

متر [م]

A standard unit of length in the metric system.

metric system

النظام المترى

A system of measurement based on tens. The basic unit of capacity is the liter. The basic unit of length is the meter. The basic unit of mass is the gram.

milliliter (mL)

ملليلتر (مل)

A metric unit of capacity.

1.000 milliliters = 1 liter.

This holds about 10 drops or 1 milliliter.

millimeter

ملليمتر [مم]

A metric unit of length.

1,000 millimeters = 1 meter.

minute (min)

دقىقة

A unit used to measure a short amount of time. There are 60 minutes in one hour.

model or visual model

نموذج أو نموذج مرئى

A picture or representation of a solution, a number or a concept.

month

شهر

A length of time equal to 28,30 or 31 days. 12 months = 1 year.

multidigit

متعدد الأرقام

Having more than one digit (number). Seven [7] is a single digit, where as seventy-two [72] and seven hundred forty-two [742] are multidigit numbers.

multiple

مضاعف

A product of a given whole number and any other whole number. 12 is a multiple of 3 and 4 because  $3 \times 4 = 12$ 

multiplicative comparison

مقارنة باستخدام عملية الضرب

A way to compare quantities using multiplication, as in "This tree is 3 times shorter than that tree".

multiply

يضرب

The operation of repeated addition of the same number.  $3 \times 5 = 5 + 5 + 5$ 

N

number

عدد

The quantity we associate with a numeral. Often used interchangeably with digit and numeral.

number line

غط الأعداد

A diagram that represents numbers as points on a line.

nes

آحاد

The value of a digit that is farthest to the right when describing whole number place value.

order

ترتيب

A sequence or arrangement of things.

**Order of Operations** 

ترتيب العمليات

A set of rules that tells the order in which to compute.

- 1. Do operations in parentheses.
- 2. Multiply and divide in order from left to right.
- 3. Add and subtract in order from left to right.

P

p.m.

مساءً [بعد الظهر]

The time between 12:00 noon and 12:00 midnight.

parentheses

أقواس

Used in mathematics as grouping symbols for operations. When simplifying an expression, the operations within the parentheses are performed first.

partial product

ناتج عملية الضرب بالتجزئة

A method of multiplying in which the value of each digit in a factor is multiplied separately, and then the partial products are added together.

partial quotient

ناتج عملية القسمة بالتجزئة

A method of dividing in which multiples of the divisor are subtracted from the dividend, and then the partial quotients are added together.

pattern

نمط

A repeating or growing sequence or design.

An ordered set of numbers or shapes arranged according to a rule.

perimeter

The distance around the outside of a figure.

period

In a large number, periods are groups of 3 digits separated by commas or by spaces.

place value

قيمة مكانية

محيط

The value of the place of a digit in a number.

prime number

عدد أولى

A whole number greater than 1 that has exactly two different factors, 1 and itself.

product

ناتج الضرب

The answer to a multiplication problem. In  $6 \times 7 = 42,42$  is the product/answer.

Q

quotient

خارج القسمة

The answer to a division problem.

R

reasonableness

معقولية

An answer that is based on good number sense.

recognize

ىدىك

identify [someone or something] from having encountered them before; know again, remember.

rectangle

مستطيل

A quadrilateral with two pairs of congruent, parallel sides and four equal angles.

regroup

إعادة تسمية

To rearrange numbers into groups of 10 when performing mathematical operations.

related facts (fact family)

حقائق ذات صلة

Related addition and subtraction facts or related multiplication and division facts. Related facts for 3,5,8:3+5=8;8-5=3;

5+3=8; 8-3=5 (also known as fact family).

remainder

باقى القسمة

The amount left over when one number is divided by another.

repeated subtraction

طرح متكرر

Subtracting equal groups to find the total amount of groups [also called division].

represent

يعرض

To show or model.

round a whole number

تقريب عدد صحيح

To identify the nearest Ten, Hundred, Thousand, (and so on) and rename a number so it is easier to mentally add, subtract, multiply, or divide.

rule

فاعدة

something that happens every time [for example: 2,5,8,11 ... the rule is + 3].

S

second [sec]

ثانية

A unit used to measure a very short amount of time. There are 60 seconds in one minute.

sequence

تسلسل

A set of numbers arranged in a special order or pattern.

sketch

رسم تقريبى سريع

A quick, rough drawing.

specify

1,40

identify clearly and definitely.

square

مربع

A parallelogram with four equal angles and four equal sides.

square unit

وحدة مربعة

A unit, such as square centimeter, used to measure area.

standard form

صيغة قياسية

A common or usual way of writing a number using digits. 12,376 is in standard form.

subtract

يطرح

An operation that gives the difference between two numbers. Subtraction can be used to compare two numbers, or to find out how much is left after some is taken away.

sum

مجموع

The answer to an addition problem.



عشرات عشرات

The value of a digit that is the second position from the right when describing whole number place value.

## Thousands

آلاف

The value of a digit that is the fourth position from the right when describing whole number place value.

### time interval

فترة زمنية

A duration of a segment of time (also known as elapsed time).

### ton

طن

A customary unit of weight. 1 ton (T) = 2,000 pounds. A metric ton, or tonne (t) is a unit of mass equal to 1,000 kilograms (about 2,200 pounds).

### two-dimensional

Having length and width.

# V

variable

متغير

ثنائي الأبعاد

A letter or symbol that represents a number.  $5 \times b = 10$ , b is a variable worth 2.

### vertical

أسب

Perpendicular to the horizon. Vertical lines go up and down.

# W

### week

أسبوع

There are seven days in a week: Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, and Saturday.

### weight

وزن

The measure of how heavy something is.

### whole

كامل

All of an object, a group of objects, shape or quantity.

### whole numbers

أعداد صحيحة

The numbers 0,1,2,3 and so on, without fractions or decimals.

### width

عرض

One dimension of a 2-dimensional or 3-dimensional figure.

### word form

صيغة لفظية

A way of using words to write a number. The word form of 12,345 is twelve thousand, three hundred forty-five.

# Y

### year

عام

The length of time it takes the Earth to revolve around the sun. 12 months = 1 year; 365 days = 1 year; 366 days = 1 leap year.

# Z

# **Zero Property of Multiplication**

خاصية الضرب في صفر

The product of any number and zero is zero  $8 \times 0 = 0$ 



# Mathematics

By a group of supervisors

STEP BY STEP REVISION

FREE PART

Cumulative Assessments

Monthly Tests

• General Revision

Directorates Exams

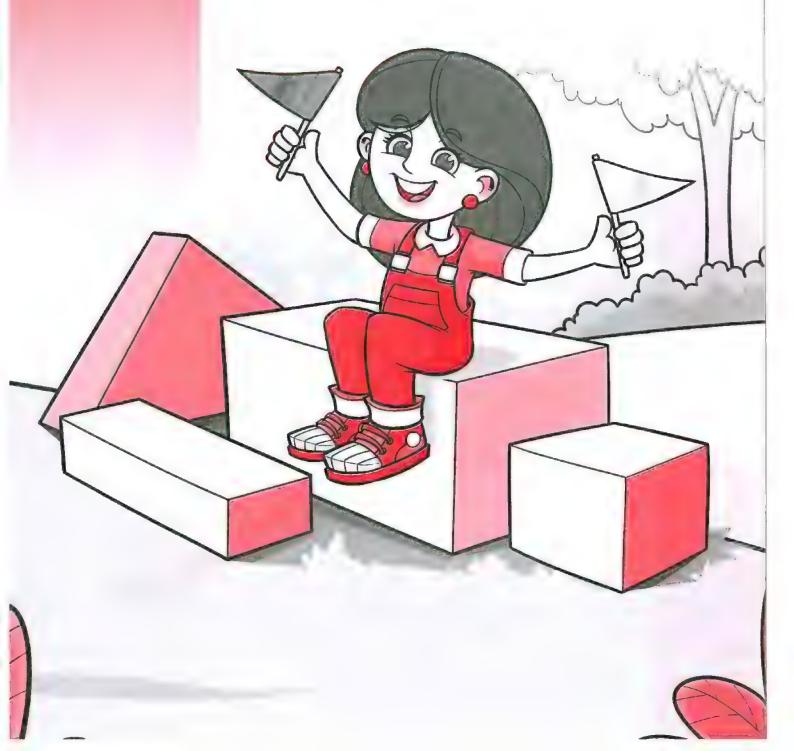
IRST TERM

PRIMARY



- **▶** Cumulative Assessments
- ▶ Monthly Tests
- **▶** General Revision
- **▶ Directorates Exams**





**Cumulative Assessment** 

# on UNIT 1

On lessons (1 & 2) unit 1

1.	Ch	oose the corre	ect answer.				
	a.	The digit	is in	the Ten Million	s place in the nu	umber 346,870,251	
		A. 8	<b>B.</b> 0		<b>C</b> . 5	D. 4	
	b. The value of the digit 3 in the number 2			the number 2	3,694,501 is		
		<b>A.</b> 3,000			<b>B</b> . 30,000		
		<b>C.</b> 300,000			<b>D.</b> 3,000,000		
	C.	The value of the number?	ne digit 4 in	the number 4	2,780 is 10 times	s the value of the digit 4 in which	
		<b>A.</b> 146,703			<b>B.</b> 426,135		
		<b>C.</b> 34,651			<b>D.</b> 10,400		
	d.	=	5 milliard, 5	million, 5 thou	usand, 5.		
		<b>A.</b> 5,050,050,0	005		<b>B.</b> 5,005,005,0	005	
		<b>C.</b> 5,555			<b>D.</b> 5,005,500,005		
2.	Co	mplete.					
	a.	The value of the	he digit 0 ir	the number 7	,056,219 is		
	b.	The number of hundreds in one million =					
	c.	. The place value of the digit 0 in the number 706,421,573 is					
	d.	58,000 thous	ands=	million	S.		
	e.	3,400,371,600	=	milliard,	million,	thousand,——	
	f.	= seventeen milliard, seventeen.					
3.	In	the number 2,	384,165,90	7, what digit i	s in the		
	a.	Thousands pl	ace?		<b>b.</b> Hundre	eds place?	
	C.	Ten Millions p	lace?		d. Ten Tho	ousands place?	
	e.	One Milliard p	lace?		f. Tens pla	ace?	

# Choose the correct answer.

- a. 5,000,000 + 40,000 + 8,000 + 700 + 20 + 3 =

  - **A.** 5,408,723 **B.** 5,048,723
- **C.** 5,084,723
- **D**. 5,048,273

- **b.** 4,800,000 = \_\_\_\_\_ thousands.
  - A. 48
- **B**. 480
- C. 4,800
- **D.** 480,000

- c. The number ———— has 9 digits.
  - **A**. 36,423,100
- **B**. 8,614,000
- **C.** 125,000,694
- **D**. 167,282
- **d.** is the compose of  $[6 \times 100,000] + [5 \times 10,000] + [3 \times 100] + [4 \times 10]$ 
  - **A.** 650,340
- **B**. 605,340
- C. 650,304
- **D**. 650,034

# 2. Complete.

- a. 34 millions, 905 thousands, 421 in standard form is \_\_\_\_\_
- **b.** The value of 7 in the number 720,358,014 is \_\_\_\_\_
- **c.** The expanded form of 5,614,003 is \_\_\_\_\_+
- **d.** 450 thousands = -

# 3. Complete the following.

Composed:

+ \_\_\_\_\_\_ +  $[7 \times 10] + [5 \times 1]$ 

Millions		Th	ousan	ds		Ones		
Н	Т	0	Н	Т	0	Н	Т	0
6	1	8		0		3	_	

# Cumulative Assessment Till lessons (5 & 6) unit 1

1. Compare. Write (1, 2 or -).								
	a. 43,600,287	a. 43,600,287 43 millions ,700 thousands and 286						
	<b>b.</b> 1,534,973 900,000 + 90,000 + 4,000 + 300 + 6							
	c. Seven millions,	c. Seven millions, two hundred forty six thousands 70,000,000						
	<b>d.</b> [5×10,000,000]	+ (7 × 1,000,000) + (4	4 × 100,000] + [2 × 1,000] + [6	× 100] 1 milliard				
2.	Choose the correct	t answer.						
	a. 2,800 thousand	5>						
	A. 2,800 hundre	eds	<b>B.</b> 28,000 hundreds					
	C. 28 millions		D. 2 milliards					
	b. The place value	of 6 in 6,482,759,310 i	S					
	A. Millions	B. Ten Millions	C. Hundred Thousands	D. Milliards				
	c. The number 42,	<b>c.</b> The number 42,365,978 has digits.						
	<b>A</b> . 10	B. 9	<b>C.</b> 8	<b>D</b> . 7				
	d. The missing dig	git such that 8,000 + 1	$100 + 80 + 5 > 8$ , $85 is_{-}$					
	<b>A</b> . 0	B. 1	<b>c.</b> 2	<b>D.</b> 3				
	e. Which of the fo	e. Which of the following statements is NOTTRUE?						
	A. 6,947 < 6,974		<b>B.</b> 200,461 > 30,499					
	<b>C.</b> 9,999 > 10,000		<b>D.</b> 75,164 > 75,146					
	f. Which of the fol	f. Which of the following numbers is smaller than "7,000,000 $\pm$ 300,000 $\pm$ 500 $\pm$ 69"?						
	<b>A.</b> 7,400,569	<b>B</b> . 7,003,569	<b>C</b> . 9,200,569	<b>D</b> . 10,300,569				
3.	. Write a number th	at is less in the Ten Th	nousands place than 53,782					
4.	. Create a number t	hat is smaller in the To	en Millions place than 745,86	4,251				
5.	. Create a number t	hat is greater in the Ti	housands place than six milli	ard, six million, eight				

thousand, eight hundred.



# Till lesson 7 unit 1

# Choose the correct answer.

a.	Which choice shows	the numbers in an	ascending order?
----	--------------------	-------------------	------------------

A. 1. 700 + 50 + 7

2. Seven hundred seventy-five

3. 765

4. Eight hundred five

C. 1. 572

2.500 + 80 + 1

3. Five hundred seventy-two

4.600 + 70 + 4

B. 1, 780

2. Eight hundred forty

3.800 + 50 + 1

4. One thousand

D. 1. Six hundred five

2.600 + 50

3. 674

4. Six hundred nine

b. Which digit makes the number sentence true? 3 million, 521 thousand, 432 < 3, 21,432

A. 3

B. 4

C. 5

D. 6

c. Which number sentence is true?

**A.** 74,562 < 9,000 + 800 + 50 + 6

**B.** 300,000 + 40 < 700,000 + 20

**C.** million < 792,561

D. Four hundred eighty two > 7 thousand,914

d. In the number 11,111, how many times is the digit in the Thousands place as the digit in the Tens place?

A. 10

**B**. 100

**C**. 1,000

**D**. 10,000

# 2. Complete.

b. Six milliard, four hundred two million, twenty-eight in standard form is —

c. The value of the digit 4 in the number 3,456,261,852 is =

d. \_\_\_\_\_ is 100 times fifty thousand.

# 3. a. List the following in an ascending order. Use standard form.

- $\bullet$ 5,000,000,000 + 20,000,000 + 5,000 + 10 + 8
- 525 million, 508

Five milliard, three million, fifty three
 5,000,000,000 + 4,000,000 + 6,000 + 9

b. List the numbers in a descending order. Use the form in which they are given.

5 millions

500 thousands

• 770,322

9 millions and 3 hundred thousands.

Cumulative Assessment	5	Till lesson 8 unit 1
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1.	Draw the number line, record the midpoint, then round each of the following numbers.					
	<b>a.</b> 574,698 (to the n	earest Ten Thousar	nd) <b>b.</b> 12,983 (to	the nearest Hundred]		
2.	2. Use place value strategy to round each of the following.					
	a. 4,865 ≈[ to the nearest 100]					
	<ul> <li>b. 7,985,462 ≈ [to the nearest Hundred Thousand]</li> <li>c. 99,999,862 ≈ [to the nearest Million]</li> </ul>					
	<b>d.</b> 54,321,782 ≈	{to the near	est Ten Thousand			
3.	Choose the correct	answer.				
	<b>a.</b> 78,562	_9,000 + 800 + 50	+4			
	A. >	B. <	<b>C.</b> =			
	<b>b.</b> 100,000 is	times 1,000				
	<b>A.</b> 10	<b>B.</b> 100	<b>C.</b> 1,000	<b>D</b> . 10,000		
	c. Which number ro	ound to 700,000 wh	en rounded to the i	nearest Hundred Thousand?		
	<b>A.</b> 706,999	<b>B.</b> 752,384	<b>C</b> . 799,999	<b>D.</b> 789,653		
	<b>d.</b> 870 hundreds =	tens.				
	<b>A.</b> 87	<b>B</b> . 8,700	<b>C</b> . 87,000	<b>D.</b> 870,000		
	<b>e.</b> 2,357 ≈ 2,000 rou	unding to the neares	st			
	A. Ten	B. Hundred	C. Thousand	D. Ten Thousand		
	f. What is the small Hundred?	lest number can be	rounded to 2,500	when rounded to the nearest		
	<b>A.</b> 2,512	<b>B.</b> 2,492	<b>C</b> . 2,457	<b>D.</b> 2,543		
4.	Write 5 different nu	mbers if rounded to	o the nearest hund	red the result is 784,500		
5.	Complete. Composed: 7,453,3	61.214				
	Decomposed:					

# on UNIT 2

**Cumulative Assessment** 

Till lesson 1 unit 2

1. Choose the correct answer.

- **a.** Fady wrote 994 + 0 = 994 using the \_\_\_\_\_ property.
  - A. additive identity

- B. commutative C. associative
- **b.** 70,000,000 + 8,000 + 50 + 1 \_\_\_\_\_ Seven million, twenty
  - A. >
- B. <

- C. =
- c. Which number round to 3,500,000 when rounded to the nearest Hundred Thousand?
  - **A.** 3,562,531
- **B**. 3,426,217
- C. 3,524,261
- **D.** 3,584,212
- d. The value of the digit 6 in the number 63,785 is 100 times the value of the digit 6 in which number?
  - **A.** 46,521
- **B.** 94,682
- **C**. 241,261
- D. 432,216

2. Complete.

**b.** 
$$(134 + 65) + 99 =$$
 +  $(65 + 99)$ 

c. 
$$0 + 9,463 =$$

- d. The additive identity is \_\_\_\_\_
- e. The place value of the digit 5 in the number 3,512,006 is \_\_\_\_\_

3. Solve each problem and name the property used.

4. Round 773,329

- a. to the nearest Ten ---
- **b.** to the nearest Ten Thousand —

# Till lesson 2 unit 2

1. Choose the correct answer.

**A.** 37,215

**B.** 45,206

**C**. 37,216

**D.** 36,216

b. Which of these statements used only Commutative Property of addition to find 17 + 48 + 13?

**A.** [17 + 48] + 13 **B.** 17 + 13 + 48

C. 17 + [13 + 48]

**D.** [17 + 13] + 48

c. 58,000 = \_\_\_\_\_tens

**A.** 58,000 **B.** 5,800

**C**. 580

**D**. 58

A. 762

**B**. 3,918

C. 3,156

D. 1,524

Estimate using rounding to the nearest 100. Find the exact answer.

35,462 a.

+ 23,221

b.

2,942 350

94,641

2,961

3. Use the properties of addition to find the sum of 142 + 55 + 18 + 45

4. In a week 3,573 tourists visited Giza Pyramids and in the next week 4,230 tourists visited them. Find the number of tourists in the two weeks. [Round to the nearest Hundred]

5. Arrange in a descending order, using the forms which the numbers are written.

- 3 milliards, 50 millions, 40
- Three milliard, five hundred million, fourteen

• 3,000,786,562

• 3,000,000,000 + 20,000,000 + 400

The order is: --



# Till lesson 3 unit 2

1. Use the standard subtraction algorithm to solve the problem. Then, round each number to the nearest Ten to check the reasonableness of your answer.

# 2. Find.

3. Choose the correct answer.

c. Which one has the answer 12,987?

e. Which of the following represents the Commutative Property in addition?

**A.** 
$$131 + 0 = 131$$

**B.** 
$$5,670 = 5,000 + 600 + 70$$

**C.** 
$$13 + [64 + 29] = [13 + 64] + 29$$

**D.** 
$$120 + 71 = 71 + 120$$

**4.** A factory produced 2,879 toys in one week. The next week , the factory produced 3,267 toys. Find the difference between the production in the two weeks.

	©Cumulative Assessment	Till lesso	on 4 unit 2
1.	<b>Complete. a.</b> The value of the variable K in the equal b. 5,467,219 — = 2,000,000 c. 4,621 + 62,504 =	ation 2,103 – K = 1,230	) is
	d. The place value of the digit 4 in the nur	mber 3,641,297 is	
2.	Choose the correct answer.		
	a. The value of the digit 3 in the number	7,516,234,981 is	
	A. 3,000,000,000 B. 300,000	<b>C.</b> 30,000	<b>D</b> . 3,000
	b. [241 + 1,614] + 7,426 = + 7,4	26	
	<b>A.</b> 241 <b>B.</b> 1,855		<b>D</b> . 1,000
	c. $[8 \times 1,000,000] + [7 \times 10,000] + [5 \times 10]$	$0] + [6 \times 10]$ in standa	ard form is
	<b>A.</b> 87,560 <b>B.</b> 8,070,560		
	d. If x = 8 = 13, then x =		
	A. 5 B. 4	<b>C</b> . 21	<b>D</b> . 22
7	Solving equations with variable. Create	a bar model.	
J.	<b>a.</b> $5 - 74,252 = 23,402$	<b>b.</b> $b + 4,261 = 21$	,253
	Bar model :	Bar model :	
	Solution:	Solution:	
	c. 47,261 – m = 31,422	<b>d.</b> 45,261 + k = 5	52,428
	Bar model :	Bar model:	
	Solution:	Solution:	
4.	A colony has 32, 425 male ants, if the col	ony has 74,319 ants , l	now many ants are female?
	Bar model :		
	Solution:		
5.	Use the properties of addition to find the	ne sum.	

a. 75 + 87 + 25

**b.** 712 + 59 + 28 + 111

10

Till lesson 5 unit 2

# 1. Complete the following.

- a. If b = 34,252 = 12,604, then  $b = ______$
- b. The value of the digit 4 in the number 4,851,061,052 is
- c. 2,785,629,142 in expanded form is \_\_\_\_\_
- **e.** 47,562 2,853 = \_\_\_\_
- f. In the bar model  $35 \times x$ , x =

# 2. Choose the correct answer.

- a. The value of the digit 8 in the number 381,452,671 The value of the digit 8 in the number 1,815,462
  - A. <
- B. =

- C. >
- **b.** The additive identity is \_\_\_\_\_
  - **A.** 10
- B. 1

**C**. 0

D. 2

- **c.** 115 + 367 = \_\_\_\_\_ + 115
  - A. 115
- B. 367
- C. 482
- **D**. 252

- **d.** 5,324 + 16,921 = \_\_\_\_\_
  - A. 54,222
- **B.** 22,254
- C. 2,245
- D. 22,245

# 3. Estimate using rounding to the nearest 100. Find the exact answer.

a. 5,646 - 2,389

- b. 72,861 - 5,466
- c. 2,462 + 1,391 + 946
- 4. Port Said has a population of 782,180, if South Sinai has a population of 111,835 and North Sinai has a population of 450,528, how many more people does Port Said have than South Sinai and North Sinai combined?
- 5. A library sold 5,325 books in the first month, 9,712 books in the second month. If the library had 20,000 books, how many books are left?

	- 4
51	

Till lesson 1 unit 3

Convert the lengths into the units on the bar models.

a.

783	cm
m	cm

b.

7,486 m		
km	m	

C.

		m	
25 kı	m	423 m	

Complete.

c. 
$$7 \text{ km}$$
,  $50 \text{ m} =$ \_\_\_\_\_ m

**d.** 
$$8,762 \text{ m} = ----- \text{km}$$
, ----- m

3. Choose the correct answer.

a. 13 thousands = \_ hundreds

**b.** 70,000,000 + 5,000 + 700 + 40 + 3 in standard form is –

c. If 
$$x + 7 = 20$$
, then  $x = _____$ 

**d.** 
$$7 \, \text{dm}$$
,  $5 \, \text{cm} =$ \_\_\_\_cm

4. Find the result.

12

# Till lesson 2 unit 3

1. Complete.

**b.** 
$$8,875 g =$$
\_\_\_\_\_\_k $g$ ,\_\_\_\_\_g

**d.** 
$$37,852 \approx$$
 [Round to the nearest thousand]

**e.** 
$$7 \tan 4 kg = kg$$

## 2. Choose the correct answer.

- a. kg is a measuring unit of \_\_\_\_\_
  - A. length
- B. mass
- C. time

D. capacity

- **b.** 2 kg and 2 g =
  - A. 22
- **B**. 202
- **C.** 2,002

**D**. 20,002

- **c.** 700 g 17 kg
  - A. <
- B. =

- C. >
- **d.** 7,000 grams = \_\_\_\_\_ kilograms
  - **A.** 7,000
- **B.** 700
- **C**. 70

D. 7

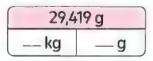
- e. \_\_\_\_\_ton = 5,000 kg
  - **A.** 50
- **B.** 500
- **C**. 5

D. 5,000

# 3. Convert the masses into the units on the bar models.

8,782 kg
—ton — kg

b.



C.

	g
52 kg	34 g

# 4. List 21,000 g , 2 ton , 23,000 g , 25 kg from least to greatest

5. A car covers 2 km in one minute, what is the distance the car covers for 8 minutes in kilometers and in meters?



# Till lesson 3 unit 3

1.	Find	each	missing	number

**e.** 
$$3,729$$
 g = \_\_\_\_\_\_ kg , \_\_\_\_\_ g

# 2. Choose the correct answer.

- a. In which number does the 5 have a value of fifty thousand?
  - A. 3,765,432
- B. 7,452,173
- C. 8,521,641
- D. 5,421,698

- b. Which of the following is the least capacity?
  - A. 7,000 mL
- **B**. 15 L
- **C**. 2,500 mL
- D. 4,200 mL
- c. The place value of the digit 6 in the number 3,562,147,209 is
  - A. Ten Millions
- B. Millions
- C. 60,000,000
- D. 6,000,000

- **d**. 7,800 g 24 kg
  - A. >
- B. <
- c. =
- **e.** The compose to  $[4 \times 100,000] + [2 \times 10,000] + [7 \times 100] + [2 \times 1]$  is \_\_\_\_\_\_
  - **A.** 4,272
- **B.** 420,720
- **C**. 420,702
- **D.** 42,702
- 3. A car was filled with 25 liters, 400 millileters. At the end of the day, there were 10 liters, 230 milliliters left in the tank. How much petrol was used?
- 4. Use properties of addition to find the result and name the property you used.

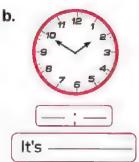
5. Write four numbers that could be rounded to 340,000 when rounded to the nearest ten thousand.

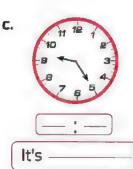
Till lessons (4 & 5) unit 3

# 1. Write the time in two ways.

a.







d.



# 2. Complete.

**b.** 
$$11 \text{ kg}$$
,  $400 \text{ g} + 3 \text{ kg}$ ,  $250 \text{ g} = 8 \text{ kg}$ ,  $9 \text{ kg}$ 

# Choose the correct answer.

15

# Till lesson 6 unit 3

# 1. Choose the correct answer.

- a. 7,000 mm = \_\_\_\_\_m
  - A. 7
- **B.** 70
- **C.** 700

**D.** 7,000

- **b.** 35,000 tens = \_\_\_\_\_ hundreds
  - A. 35
- **B**. 350
- **C**. 3,500

**D**. 35,000

78,526 q

- c.  $[7 \times 10,000] + [4 \times 1,000] + [5 \times 100] + [3 \times 10]$  \_\_\_\_\_\_7,453
  - A. >
- B. <

- C. =
- d. In the opposite bar model, x = \_\_\_\_\_
  - **A.** 526 kg

**B**. 526 g

C. 526 m

- D. 526 mL
- e. 3:40 + 30 minutes = \_\_\_\_
  - A. 4:10
- B. 4:50
- C. 3:20

D. 7:40

78 kg

# 2. Ahmed bought 5 m, 50 cm of cloth, he made a pair of trousers by 2 m, 25 cm What is the length of the left cloth with him?

3. The mass of Mina is 43 kg, 450 g and the mass of Sara is 34 kg, 900 g What is the total mass of Mina and Sara?

# 4. Complete.

- **a.** 16 dm = \_\_\_\_ cm
- b. 4L,240 mL-2L,420 mL=\_\_\_\_mL
- c. If x = 342 = 741, then x = 4
- **d.** 78,000 cm = \_\_\_\_\_ m
- **e.** 5 days = \_\_\_\_\_ hours

# 5. Write the time in two ways.

a.





It's \_\_\_\_



[lt's \_\_\_\_

16

Till lesson 7 unit 3

4	Choose	the	correct	answer
4.0	CHUUSE	THE	COLLECT	allower.

a.	10 kilograms = _	grams
----	------------------	-------

A. 10

B. 100

C. 1,000

**D**. 10,000

A. 835

B. 8,350

C. 8,035

**D.** 83,500

A. Thousands

B. Ten Millions

C. Hundred Millions

D. Milliards

A. 8:05

B. 6:45

C. 5:25

D. 6:25

A. 97

**B.** 970

**C.** 9,700

D. 97,000

# 2. Complete.

**a.** 
$$78,456 \approx$$
 [to the nearest Ten]

- c. If the total mass of 10 balls having the same mass is 120,000 grams
  - , then the mass of each ball is \_\_\_\_\_ kg

**d.** 
$$2 \text{ tons}, 20 \text{ kg} =$$
 kg

3. A tank with capacity of 70 liters is filled with 25,000 milliliters of water.

How many more liters of water are needed to fill it up completely?

4. Youssef studies 30 minutes every day. How many hours will he study in 6 days?

5. An ant may walk up to 5 km per day. If the ant continues this for 20 days, how many meters will the ant walk?

# on UNIT 4

Cumulative Assessment

Till lesson 1 unit 4

1. Complete.

a.	3		15	+	2	0	50	=	
----	---	--	----	---	---	---	----	---	--

**d.** \_\_\_\_\_mL=
$$5L,34mL$$

**e.** 
$$39 + 0 =$$
 property]

Choose the correct answer.

- **B**. 20
- C. 40

D. 100

**b.** The perimeter of the rectangle of 7 cm length and 3 cm width 
$$=$$
 \_\_\_\_\_

- A. 10 cm
- **B.** 10 cm<sup>2</sup>
- **C**. 20 cm
- D. 20 cm<sup>2</sup>

c. 4 weeks 30 days

- A. <
- B. =
- C. >

d. 35.714 – 7.642 = \_\_\_\_\_

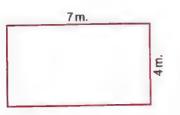
- A. 37,356
- B. 73,356
- **C.** 28,072
- **D**. 28,702

e. The value of the digit 5 in the number 531,261,049 is -

- **A.** 500,000,000 **B.** 5,000,000
- **C.** 50,000,000
- **D**. 500,000

3. Calculate the perimeter of each of the following shapes "Use two different formulas to solve each problem" Show your work.

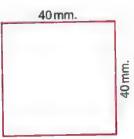
a.



First formula ...

Second formula —

b.



First formula -

Second formula -

4. Shady is building a rectangular frame. Its length is 42 millimeters and its width is 28 millimeters. What will the perimeter of the frame be?

18

# Till lesson 2 unit 4

1. Choose the correct answer.

a. A rectangle its length is 10 m and its width is 7 m, then its area = - m<sup>2</sup>

A. 17

B. 34

C. 70

**D**. 140

**b.** A square of side length 7 cm, then its area = \_\_\_\_\_

A. 28 cm

B. 28 cm<sup>2</sup>

C. 49 cm

**D.**  $49 \, \text{cm}^2$ 

c. The perimeter of the square = side length × \_\_\_\_\_

A. itself

B. 4

C. width

D. length

d. The place value of the digit 0 in the number 3,250,641,798 is \_\_\_\_

A. Millions

B. Milliards

C. Hundred Thousands

D. Thousands

e. 3L,25 mL = \_\_\_\_ mL

A. 325

**B.** 28

C. 3,025

**D.** 30,025

2. Complete.

c. 
$$3 \text{ kg}, 3 \text{ g} = ___g$$

**d.** If 
$$A = 423 = 147$$
, then  $A =$ 

**f.** 
$$214 + [361 + 700] = [214 + 361] + \dots$$

3. Find the area and the perimeter of each of the following figures.

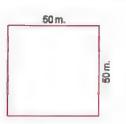
a.



Area = \_\_\_\_\_

Perimeter = \_\_\_\_\_\_

b.



Area = \_

Perimeter = \_\_\_\_\_

C.



Area = \_\_\_\_

Perimeter =

4. Sketch two rectangles, the area of each one is 12 cm<sup>2</sup>. Find the perimeter of each.

a.

b.

P =

P=\_\_\_\_

22

## Till lesson 3 unit 4

1. Complete each of the following.

a. A square has a perimeter 24 cm, then its area is \_\_\_\_\_\_

**b.** A square of area 25 cm<sup>2</sup>, then its side length is \_\_\_\_\_

c. The area of a rectangle is 32  $\text{m}^2$  and its length is 8 m, then its width is -

d. 3:25+6:42 = -

e.  $37.856 \approx$  [Round to the nearest 1,000]

2. Choose the correct answer.

a. Width of a rectangle = \_\_\_

A. Area : length B. Area : width

C. Length × width

D. Area × length

**b.** A square whose area is  $25 \,\mathrm{m}^2$ , then its side length = \_\_\_\_\_

A. 4

**B**. 5

C. 6

D. 7

c. 199 + 5.482 9.462 - 3.781

A. <

B. =

d. The side length of a square of perimeter 20 cm \_\_\_\_ the side length of a square of area  $49 \, \text{cm}^2$ 

A. <

B. =

C. >

e. 3L,720 mL = -\_\_\_\_ mL

A. 723

B. 750

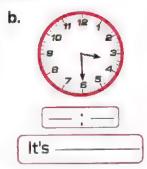
C. 3.720

**D**. 3,072

3. Write the time in two ways.

a.





C.



d.

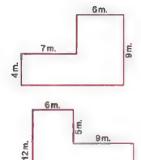


4. A rectangle of perimeter 20 cm. and its length is 6 cm. Find its area.

5. A colony of ants eats approximately 2,000 grams of food each day. If the ants have 10 kilograms of food stored, how many days will the food last?

## 1. Complete.

a. The perimeter of the opposite complex figure equals \_\_\_\_\_ m



- b. The area of the opposite complex figure equals \_\_\_\_\_m<sup>2</sup>
- **c.**  $7,000 \, q =$  kg
- d. The value of the digit 5 in 5,321,647 is
- **e**. 75 dm = \_\_\_\_\_ m, \_\_\_\_ dm
- f. The value of the digit 0 in the number 769,423,018 is —

#### Choose the correct answer.

- a. 59.764 < ...
  - **A.** 59,000
- B. 49.999
- **C.** 59,765
- **D**. 59,763
- **b.** Hany wrote 325 + 0 = 325, using the \_\_\_\_\_ property.
  - A. commutative B. associative
- C. additive identity
- D. distributive

- c.  $[3 \times 1,000] + [3 \times 10] =$ 
  - **A**. 330
- **B**. 3,030
- **C.** 3,300

- **D.** 30,030
- d. The perimeter of a rectangle with 7 cm long and 3 cm wide equals
  - A. 21 cm B. 20 m
- **C.** 21 cm<sup>2</sup>
- **D.** 20 cm

## 3. Find the result.

a. 2,456 – 1,999

- **b.** 356 149
- 4. Jana walked once around the squared playground. She covered a distance of 20 m What is the area of this playground?

Till lesson 1 unit 5

1. Choose the correct answer.

- a. 42 is \_\_\_\_\_ times the number 6.
  - A. 6
- B. 7

- C. 8
- D. 9

b. 8+8+8+8+8=\_\_\_\_

- **A.**  $8 \times 8 = 64$  **B.**  $4 \times 8 = 32$
- C.  $6 \times 8 = 48$
- **D.**  $5 \times 8 = 40$

c. 7.000 + 600 + 20 + 1 >

- A. 7,921
- **B**. 8,006
- C. 6,997
- **D**. 9,300

d. \_\_\_\_\_mL=3L,124 mL

- A. 3,124
- **B**. 3,024
- **C.** 1,243
- **D.** 1,324

e. Milliard is the smallest \_\_\_\_\_ digit number.

- A. 5
- B. 8
- C. 9

**D**. 10

2. Complete.

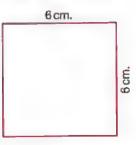
- a. 24 is \_\_\_\_\_ times the number 8.
- b. The multiplicative comparison statement for

9 9 9 9 9 9 — is — times the number 9.

c. 4 days = \_\_\_\_\_ hours

- **d.** 10 + 10 + 10 + 10 = \_\_\_\_\_ × \_\_\_\_ = \_\_\_
- e. The additive identity is \_\_\_\_\_

3. Find the area and the perimeter of each of the following figures.



Area = \_\_\_\_\_

Perimeter = \_\_

Area = \_\_\_\_\_

Perimeter = \_\_\_

4. Compare, write the method you used.

- a. 64 and 8 —
- **b.** 36 and 4 —



## Till lessons (2 & 3) unit 5

1. Write an equation for each comparison statement. Use a letter to represent the unknown. Solve the equation.

a. A number is 6 times the number 5

**b.** 40 is 5 times a number.

c. 70 is how many times the number 10?

2. Solve.

a. n = 2 × 8 \_\_\_\_\_

**b.** 7 × k = 49 \_\_\_\_\_

c. b × 9 = 72

Choose the correct answer.

a. 9 m - 80 cm = \_\_\_\_ cm

A. 800

B. 820

C. 720

D. 980

**b.** If  $z \times 8 = 32$ , then z = ----

A. 4

**B**. 8

C. 2

**D**. 3

c. 341 + 596 = \_\_\_\_

A. 837

B. 997

C. 937

D. 255

d. What number is 8 times the number 12?

A. 120

**B**. 80

C. 128

D. 96

## 4. Complete.

a. 5 times the number \_\_\_\_\_ is 20.

b. 4 times the number 9 is \_\_\_\_\_

**c.** If  $n \times 3 = 15$ , then n =

d. The place value of the digit 5 in the number 3,452,162 is —

e. 3 tons = \_\_\_\_ kg



## Till lessons (4 & 5) unit 5

## 1. Complete.

## Choose the correct answer.

- A. 28
- **B**. 108
- C. 1,180
- **D.** 180

- A. 560
- B. 56
- C. 5,600
- **D.** 87

- A. 50
- **B.** 500
- C. 55
- D. 5

- A. 24
- **B.** 12
- C. 32
- D. 16

## 3. Put (<,> or =).

6 kg,550 g

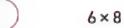


1 + 258

**c.** 
$$3 \times 200$$



 $300 \times 2$ 



## 4. Martin has 36 marbles. Write an equation using the Commutative Property of Multiplication to describe two ways he can arrange them.

5. Hany bought 4 mobiles, the price of each mobile is 3,000 pounds. How much did Hany pay?

## Till lessons (6 & 7) unit 5

## 1. Solve each problem.

## 2. Complete.

## 3. Use decomposing and the Associative Property of Multiplication to solve.

## 4. Ayman has 5 bags, each bag has 8 packs of coloring pencils, if each pack has 6 coloring pencils, how many pencils Ayman has?

#### 5. Choose the correct answer.

a. 
$$7,000,000 + 800,000 + 3,000 + 60 =$$

c. 
$$26,473 \approx$$
 \_\_\_\_\_ (to the nearest Ten)

# Cumulative Assessments on UNIT 6

**Cumulative Assessment** 

Till lessons (1 & 2) unit 6

## 1. Choose the correct answer.

- a. 4 is a factor of \_\_\_\_\_
  - A. 14
- B. 12
- C. 22
- D. 42

- **b.**  $30 = 5 \times$ 
  - A. 6
- **B.** 5

C. 8

**D**. 7

- c. 48 is 6 times the number -
  - A. 6
- B. 9

C. 7

**D**. 8

- d. \_\_\_\_\_ is a factor of 27.
  - A. 4
- **B.** 5

- C. 9
- D. 10
- The missing factor in the factor rainbow is \_\_\_\_\_
  - A. 6

B. 12

C. 24

D. 36



## 2. Complete.

- a. All factors of 6 are
- **b.** \_\_\_\_\_ is the only even prime number.
- **c.** 76 × 1,000 = \_\_\_\_\_
- d. The value of 8 in the number 387,064,100 is \_\_\_
- **e.** 8 kg, 8 g =\_\_\_\_\_g
- f.  $789 \, \text{mm} =$ \_\_\_\_\_ cm, \_\_\_\_ mm
- g. The side length of a square = the perimeter of the square ÷ \_\_\_\_\_

## 3. Write.

- a. All the factors of 32
- b. All the factors of 23
- c. All prime numbers between 20 and 40
- d. All composite numbers between 50 and 65



Till lesson 3 unit 6

1.	Write	the	common	factors	of	each	pair	of	numbers.
----	-------	-----	--------	---------	----	------	------	----	----------

a. 12 and 28

b. 30 and 42

c. 19 and 8

#### 2. Complete.

a. G.C.F of 18 and 40 is \_\_\_\_\_

**b.** 100 × 24 = \_\_\_\_\_

c. (5 × 8) × 7 = \_\_\_\_\_ × \_\_\_ = \_\_\_\_

**d.** G.C.F of 10 and 25 is \_\_\_\_\_

**e.**  $3,275 \approx$  \_\_\_\_\_ rounding to the nearest Hundred.

#### 3. Choose the correct answer.

a. The common factor of all numbers is \_\_\_\_\_

A. 1

B. 0

C. 2

D. 10

**b.** 38.265 m < \_\_\_\_\_

A. 38 km

B. 38 km + 100 m

C. 83 km

**D.** 83 m

c. 3 and 7 are factors of

A. 36

B. 18

C. 35

D. 42

d.7+7+7+7=

 $A.4 \times 7$ 

B.7 + 4

C. 7×7

D.7 + 7

**e.** If 3,000 - x = 1,391, then x =\_\_\_\_\_

A. 4,391

B. 2,391

C. 1,609

D. 2,609

# 4. Bassem has 48 pens and 40 pencils, he wants to put them in packs so that each pack has the same number of pens and the same number of pencils. What is the greatest number of packs? What is the number of pens and pencils of each pack?

	1
Cumulative Assessment	ŀ

## Till lessons (4 & 5) unit 6

1.	Complete.
-	Colliberer.

- a. The common multiple for all numbers is —
- b. The smallest prime number is \_\_\_\_\_\_
- **c.** 50,000,000 + 341,000 + 143 = \_\_\_\_\_
- d. In the opposite bar model, the value of b = \_\_\_\_\_
- **e.** 5 km 3,000 m = km

3,301	2,001

#### Choose the correct answer.

- a. 38,294,182 rounded to the nearest Hundred Thousand is
  - **A.** 38,200,000 **B.** 30,000,000 **C.** 38,290,000
- **D**. 38,300,000

- b. \_\_\_\_\_is a multiple of 8.
  - A. 56
- B. 42
- C. 36
- **D**. 18

- c. \_\_\_\_\_ is not a multiple of 6.
  - A. 36
- **B**. 0
- C. 26
- D. 24

- d. 0 is a common multiple of
  - A. 10 and 8 only. B. all numbers. C. 6 and 9 only.
- D. 4 and 5 only.

#### 3. List.

- a. All multiples of 3 up to 30
- b. All factors of 36
- c. Two common multiples of 2 and 5
- 4. Bassem has a swimming practice every five days of July, beginning July 5 How many times he will go to his practice in July?

28

## Till lesson 6 unit 6

1. Comple	ete.
-----------	------

a.	15 is a multiple of 5.	then	is a factor of
•	ID ID a HIULUBIE OF D 4	LIICH.	13 4 146 61 01

#### 2. Choose the correct answer.

A. 7

B. 9

C. 6

D. 2

b. 8 is a multiple of \_\_\_\_\_ and \_

A. 2,6

B. 4,12

C. 4,8

D. 8,16

c. If 5 × a = 35, then a = \_\_\_\_\_

A. 7

**B**. 5

C. 6

D. 8

d. G.C.F of 36 and 24 is \_\_\_\_\_

A. 8

B. 12

C. 9

D. 6

e. A number has only two factors and their sum is 8, then the number is \_\_\_\_\_

A. 3

**B**. 5

C. 6

D. 7

**3. a.** The number is an even number, it is a multiple of 3 and 5 and lies between 20 and 40 What number is it?

**b.** The number is an odd number, it is a multiple of 3 and a factor of 18 and lies between 5 and 15. What number is it?

4. Find the relationship between the numbers in each group. Write at least two sentences describing each relationship.

a. 2,5 and 10

**b.** 4,6,12 and 30

29

Till lessons (1 & 2) unit 7

1. Complete.

a. 
$$4 \times 95 = [4 \times ___] + [4 \times __]$$

2. Choose the correct answer.

**A.** 
$$[8 \times 60] + [8 \times 50]$$

**B.** 
$$[8 \times 60] + [8 \times 5]$$

C. 
$$[8 \times 6] + [8 \times 5]$$

**D.** 
$$[8 \times 6] + [8 \times 50]$$

3. Solve.

4. Mohamed bought 7 packs of candies, each pack holds 45 candies. How many candies with Mohamed?



## Till lessons (3 & 4) unit 7

#### 1. Choose the correct answer.

**A.** 
$$36 \times 5 = 180$$
 **B.**  $52 \times 4 = 280$ 

**B.** 
$$52 \times 4 = 280$$

**C.** 
$$28 \times 3 = 84$$

**D.** 
$$47 \times 2 = 94$$

$$B.2 \times L + 2 \times W$$

C. 
$$[L \times W] \times 2$$

#### 2. Complete.

f. 
$$6 \text{ m} - 50 \text{ cm} =$$
\_\_\_\_\_cm

## 3. Solve using partial products algorithm.

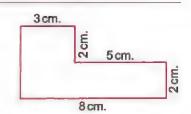
a. 
$$9 \times 78$$

**b.** 
$$642 \times 4$$

## 4. Find the perimeter and the area of the opposite figure.

a. The perimeter = \_\_\_\_ cm

**b.** The area = 
$$---$$
 cm<sup>2</sup>



5. If the mass of a box is 131 kg, then find the mass of 7 boxes with the same mass.

31

## Till lesson 5 unit 7

#### 1. Choose the correct answer.

A. 26

**B**, 260

**C**. 2,600

**D.** 26,000

A. 420

**B**. 4,200

C. 42,000

**D.** 2,400

**A.** 5 and 4

B. 6 and 9

C. 3 and 8

**D.** 5 and 3

**A.** 4,080

**B.** 8,040

C. 4,800

**D.** 1,808

**e.** 
$$[34 \times 7] \times 19 = 34 \times [$$
  $\times 19]$ 

A. 34

B. 7

C. 19

**D**. 238

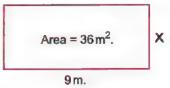
## 2. Complete.

**b.** If 
$$6,426 + k = 10,384$$
, then  $k =$ \_\_\_\_\_

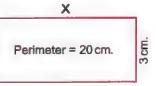
c. 
$$3 \times 32 = 32 \times 3$$
 the property used is

## 3. Find the unknown side length based on the givens of each rectangle.

a.



b.



- 4. a. Dina bought 25 kg of mango and the price of 1 kg is 30 pounds. How much did Dina pay?
  - **b.** Write three numbers that round to 38,000

Till lesson 6 unit 7

## 1. Complete.

f. 
$$7,000 \text{ kg} =$$
\_\_\_\_\_ tons

## 2. Choose the correct answer.

**a.** 
$$18 \div 5 =$$
 \_\_\_\_\_

c. 
$$30 \div = 7R2$$

f. 
$$[45 \times 20] + [45 \times 28] = 45 \times 28$$

## 3. Find the quotient and the remainder.

4. Hany has 64 pounds, he wants to give the money to his three sons, how can he share the money equally? What is the remainder?

## Till lesson 7 unit 7

1. Complete.

**a.** 
$$800 \div 4 =$$
 \_\_\_\_\_

c. 
$$42,000 \div 7 =$$

Choose the correct answer.

- A. 6
- **B**. 60
- C. 7

D. 8

**b.** 
$$30,000 \div 5 = -$$

A. 600

- B. 60
- C. 6
- **D.** 6,000

c. A rectangle of length 18 cm and width 9 cm, then its area equals \_\_\_\_\_

- A. 162 cm
- **B.** 162 cm<sup>2</sup>
- C. 126 cm<sup>2</sup>
- D. 126 cm

d. \_\_\_\_\_hundreds  $\div$  4 tens = 5 tens

- A. 200 e. 86 × 8 = \_\_\_
- **B**. 20
- **C**. 2

**D.** 2,000

- A. 688
- **B**. 886
- C. 868
- D. 588

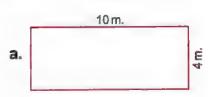
f. \_\_\_\_\_is a common multiple for 8 and 6

- A. 28
- **B.** 36
- C. 24
- D. 42

3. There are 320 tourists wanted to be seated in 8 buses. How many tourists are in each bus?

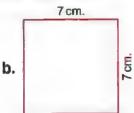
4. A rectangular flowerbed in the city park has an area 15 square meters. The width of the flowerbed is 3 meters. What is the length of the flowerbed?

5. Find the area and perimeter of the rectangle and the square.



Area = \_\_\_\_\_

Perimeter = \_\_



Area = \_\_\_\_

Perimeter = \_



## Till lesson 8 unit 7

1. Choose the correct answer.

a. 
$$95 \div 6 =$$

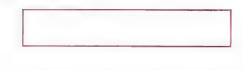
2. Complete.

**d.** The multiplicative equation of 
$$7+7+7+7+7=35$$
 is \_\_\_\_\_

3. Use the area model to solve each of the following.

a. 
$$84 \div 3$$

**b.** 
$$216 \div 6$$



#### 4. Solve.

a. 
$$52 \div 2 =$$

## Till lessons (9 & 10) unit 7

## 1. Complete.

**a.** 
$$--- \div 3 = 54$$

**e.** The area of the rectangle with 3 cm wide and 7 cm long = 
$$-$$
 cm<sup>2</sup>

## 2. Choose the correct answer.

- A. 8
- B. 16
- C. 18
- D. 25

- **A**. 125
- B. 484 C. 124
- D. 424

- A. <
- B. =

C. >

**d.** If 
$$3,645 + X = 5,789$$
, then the value of X is \_\_\_\_\_

- A. 2,144
- B. 3,144
- **C**. 8,434
- D. 9,434

- A. 0
- B. 630
- C. 603
- D. 693

## 3. Divide using partial quotients algorithm.



## 4. Divide using standard division algorithm.

## 

36

## Till lesson 11 unit 7

#### Choose the correct answer.

**a.** If 
$$73 \times 8 = 584$$
, then  $584 \div 8 =$ 

A. 78

**B**. 73

C. 83

**D**. 87

**b.** In the problem 3,467 
$$\div$$
 5, the quotient is between — and — and —

**A.** 400,500

**B.** 300,400

C. 600,800

**D**. 1,000,2,000

A. 9

**B.** 8

C. 7

D. 6

**A.** 1,300

**B**. 1,003

**C**. 1,030

**D**. 103

**e.** 
$$3,264 \div 3 =$$

**A.** 1,622

B. 1,880

**C.** 1,088

**D.** 1,808

#### 2. Complete.

**e.** If 
$$641 \times 7 = 4,487$$
, then  $4,487 \div 7 =$ 

## 3. Amal has 358 L.E. She divided the money between her 2 children. What is the share of each one?

## 4. Write the division problem that matches the multiplication problem.

**a.** 
$$421 \times 6 = 2,526$$

**b.**  $382 \times 2 = 764$ 

c. 652 × = 5.216 d. 578 × = 2.312

37

Till lessons (1 & 2) unit 8

1. Find the value of each of the following.

**b.** 
$$8 + [12 - 5] \times 3 =$$

2. Complete.

a. 
$$36 - [4 + 2] \times 5 =$$

c. 
$$3+15\div 3+5=$$

**e.** 
$$[5 \times 1,000,000] + [8 \times 1,000] + [4 \times 10] =$$

f. 
$$4,369 \approx$$
 \_\_\_\_\_\_ [to the nearest 100]

3. Choose the correct answer.

a. 
$$30 \div 6 + 9 - 4 =$$

c. 
$$51 + 17 + 69 + 63 =$$

**d.** 
$$3 \times 9 - [10 - 3] \times 2 =$$

**e.** 
$$30 \div 6 + 4 - 2 \times 3 =$$

f. If 
$$18 - x = 6$$
, then  $x =$ \_\_\_\_\_

4. A group of 330 tourists wants to travel to Luxor ,154 tourists will take the train , the rest will take microbuses , each microbus holds 8 seats.

How many microbuses will be needed?

# **Monthly Tests**

Month	Lessons			
October	From lesson (1) – Unit (1) to the end of lesson (5) – Unit (3)			
November	From lesson [6] – Unit [3] to the end of lesson [4] – Unit [6]			



# October Test 1



## 1. Choose the correct answer.

1	The period of the	underlined digits in	the number <u>25</u> ,613,72	9,114 is				
•	A. ones.	B. thousands.						
2	2. 2 days and 2 hours = ——— hours							
	A. 22	B. 4	<b>C</b> . 62	<b>D.</b> 50				
3	3.721 cm =							
	<b>A.</b> 21 m <sub>2</sub> 7 cm	B. 72 m ,1 cm	<b>C</b> . 7 m , 21 cm	<b>D.</b> 1m ,72 cm				
Z	. Rounding the nu	mber 37,098 to the ne	earest thousand is $ = $					
	<b>A.</b> 37,100	<b>B</b> . 37,000	<b>C</b> . 37,108	<b>D.</b> 37,098				
5	5.12 L , 50 mL =	mL						
	A. 62	<b>B</b> . 5,012	<b>C.</b> 1,250	<b>D.</b> 12,050				
	Complete.	ligit 4 in the number	364,217,098 is		(5 marks)			
		= [234 +]						
	•	+4+7,000,000=						
	$9.16 \times -9 = 26.16$							
		—— [Round to the ne	arest ten thousand]					
3. a			ate is 519,800 people cople. Then what is th					
			and the population of					
	o. By using the pro	operties of addition fi	nd the sum of:					
	12 + 30 + 28 + 2				(3 marks)			
-								

# October Test 2



## 1. Complete.

- 1.45 kg, 68 g = -------g
- 2. Three milliard, one hundred thirty-seven million, six hundred nineteen thousand, eighty-eight = \_\_\_\_\_ [in standard form]
- 3. Rounding the number: 8,532 to the nearest 1,000 is approximately \_\_\_\_\_
- 4. The place value of the digit 7 in the number 547,621,398 is \_\_\_\_\_
- 5.9 L-3,000 mL = ---- mL

## 2. Choose the correct answer.

(5 marks)

- 1. Milliard is the smallest number formed from ———— digits.
  - A. 6

B. 9

**C.** 10

- D. 12
- 2. The liter (L) is the basic unit of \_\_\_\_\_
  - A. length

B. mass

C. time

- D. capacity
- 3. The additive identity is \_\_\_\_\_
  - A. zero

B. 1

C. 10

- **D**. 100
- 4.  $[5 \times 1] + [8 \times 1,000] + [4 \times 10,000] =$ 
  - A. 485

**B.** 4,805

C. 48,005

**D.** 480,005

- 5. What is the value of X?
- 35 + X = 47

A. 7

B. 12

C. 82

- D. 72
- 3. a. The game started at 7:50 P.M. It ended at 10:05 P.M.

How long was the game?

(3 marks)

**b.** A bridge of ants consists of 142 ants, and another bridge consists of 165 ants. How many ants are there in the two bridges together?

(2 marks)

# October Test 3



#### 1. Choose the correct answer.

1.83,754 1	0	0,	0	0	C
------------	---	----	---	---	---

- A. >
- B. =

C. <

A. 8

**B**. 80

C. 800

- **D**. 8,000
- 3. Which of the following is the greatest mass?
  - A. 900 q

**B.** 20,000 g

C. 70 kg

- **D.** 16 kg
- 4. Rounding the number 34,089 to the nearest ten thousand is \_\_\_\_
  - A. 34,000

**B.** 34,090

**C.** 30,000

- **D**. 35,000
- 5.35 million, 17 thousand, 230 = -
  - **A.** 3,517,230

**B**. 35,170,230

**C**. 35,017,230

**D.** 3,517,023

## 2. Complete.

(5 marks)

- 1. If 835 A = 751, then the value of A = ----
- 2.8 L, 200 mL 2 L, 50 mL = ---- mL
- 3. The place value of the digit 2 in the number 9,152,747,180 is —
- **4.** 50,000,000 + 345,000 + 730 = ----
- **5.** 8.000 thousands = millions

## 3. a. Hany and Sameh participated in a project. Hany paid 251,650 pounds. If the cost of the project is 500,000 pounds, how much did Sameh pay?

(3 marks)

b. Write the numbers in a descending order.

(2 marks)

- 4,237,651 , 4,273,653 , 495,627 , 4,237,690

# November Test 1





## 1. Choose the correct answer.

- 1. Which of the following is a multiple of 5?
  - A. 12
- **B.** 56
- C. 45
- D. 89

- 2. The missing factor in the box equals -
  - A. 6.000
- **B.** 600
- C. 60
- D. 6
- 3.45 is \_\_\_\_\_ times the number 9.
  - A. 40
- **B**. 5

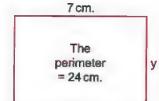
C. 6

- D. 9
- 4. A square its side length is S. What is its perimeter?
  - A. S+S
- B. S×S
- C. 5 × 4
- D. S+S+S



The value of y is \_\_\_\_\_

- A. 4 cm
- B. 5 cm
- C. 6 cm
- **D.** 7 cm



## 2. Complete.

(5 marks)

1. The multiplication equation of 8 + 8 + 8 + 8 + 8 = 40 is \_

$$2.2 \times [3 \times 4] = [2 \times ----] \times 4$$

- 3. a. Sandy purchased 3 kg , 400 g of sugar and 5 kg , 217 g of rice. What is the total mass which Sandy carried? (2 marks)
  - b. Find the G.C.F of 40 and 50.

(3 marks)

# November Test 2



	. Choose the correct answer.						
	1. The common	factor of all numbers	s is				
	<b>A</b> . 0	B. 1	<b>C</b> . 2	<b>D.</b> 3			
	<b>2.</b> If a × 33 = 33	×7, then a =					
	<b>A</b> . 33	<b>B</b> . 40	<b>c</b> . 7	<b>D.</b> 31			
	3. The length o	f a rectangle = ——					
	A. Area ÷ le	ngth	B. Area ÷ widt	h			
	C. Length ×	width	D. Area × widt	h			
	-		ch day, then the ants w	alkkm			
	A. 3	<b>B</b> . 150	<b>C</b> . 15,000	<b>D</b> . 15			
	5. Which of the	following is not a pri	me number?				
	A. 2	B. 7	C. 9	<b>D.</b> 11			
	2.160 = 3. All the factor 4.500 x 3 =	rs of 10 are			×		
3.	long. How l	ong will the border of	the edge of a square ca Amal's cake be ?		(2 marks)		
	Factors of 6	8:	greatest common fact				
	U.L.F ——						

# November Test 3



#### 1. Choose the correct answer.

- 1. All the following numbers are composite except \_\_\_\_\_
  - A. 66
- **B**. 67
- C. 68
- D. 69

- 2. What number is 10 times the number 17?
  - A. 27
- B. 1.700
- C. 7

**D**. 170

3. The length of a rectangle is b, the width is c

What is its area?

A.b+c

B, b×c

C.  $[2 \times b] + [2 \times c]$ 

- **D.**  $[2 \times b] \times [2 \times c]$
- 4. If Marvina studied from 4:10 P.M. to 5:00 P.M., then she studied \_\_\_\_\_ minutes.
  - **A**. 60
- B. 110
- C. 40
- **D.** 50

- 5. [200 × 3] × 0 =
  - **A.** 600
- B. 6.000
- C. zero
- **D.** 203

## 2. Complete.

(5 marks)

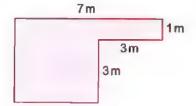
- 1. If a × 7 = 7 × 8, then a = ----
- 2.19,000 = ---×19
- 3. \_\_\_\_\_is 5 times the number 3
- **4.** 18 has \_\_\_\_\_\_ factors.
- 5. The perimeter of a square of side length 10 m is \_\_\_\_\_ m

## 3. a. Apply the properties of multiplication to find: $2 \times 3 \times 5$

(2 marks)

b. Calculate the area and the perimeter of the following complex shape.

(3 marks)







## **General Revision**

## On Unit 1

1. Complete. 1. The number 163,518,943 to the nearest million is ———— [Cairo – Heliopolis 22] 2. The standard form of the number three million, two hundred fourteen thousand, nine hundred thirty-six is -[Giza - Dokkl - 6<sup>th</sup> October 22] 3. The standard form of the number four hundred and nine is -[El-Monofia - Quesna 22] 4. The value of the digit 6 in 61, 230, 478 is — [El-Gharbia - Samanoud 22] (Ismailia 22) 5. The value of the digit 6 in the number 61,230,478 is ———— [El-Beheira 24] **6.** The value of the digit 8 in 2,458,462,230 is — [Giza 24] 7. The place value of digit 8 in the number 48,216,705 is (Port Said 24) 8. The place value of the digit 2 in the number 2,500,000 is — (Souhag 23) **9.** The place value of the digit 7 in the number 37,589,632 is -(Qena 24) **10**. 40 tens = -[Cairo 23] 11.34,279  $\approx$  [to the nearest ten thousand] [El-Monofia - Sadat City 23] 12. The number 7,257,365 rounded to the nearest million is -[Giza - Abo El-Nomros 23] 13. The number 32,586  $\approx$  ——— [to the nearest thousand] (El-Kalyoubia 23) 14. The smallest number formed using the digits 0, 8, 3, 9, 5, 6, 1 is [El-Beheira 23] **15**. 3,000,000 + 8,000 + 400 + 30 + 3 = ----[Alex, 23] **16.** 3,501,702,903 in word form is ——— **17**. — = 70,000,000 + 70,000 + 70 **18**. 8,000 thousands = — — millions **19.**  $[5 \times 100,000] + [3 \times 1,000] + [2 \times 100] + [7 \times 10] = -$ 

#### Choose the correct answer.

1.90,000 + 4,000 + 300 written by ———

[El-Monofia 24]

- A. standard
- B. expanded
- C. word form
- D. otherwise
- **2.** The number 9 million  $_{9}$  12 thousand  $_{9}$  5 (in standard form) =

(Port Said 24)

- A. 9,125
- **B.** 9,012,005
- **C.** 9,125,000
- **D.** 9.000.125
- 3. Nineteen million eight hundred sixty-nine thousand five hundred twenty one
  [in numbers] = \_\_\_\_\_\_\_
  [Giza October garden 24]

A. 9,546,521

- **B**. 90,965,851
- C. 19,869,521
- D. 19,521,869

4, 9,000,000 + 6,000	) + 50 + 6 =		[Port Said 24]
	B. 960,666		D. 6,569
	liard ,235 million and 1		
			[El-Menia - Samalot 22]
A. 1,235,000,127	B. 1,235,127	<b>C.</b> 1,272,351	<b>D.</b> 1,235,127,000
6. The expanded for	m of the number 7,215	,603 is ——	[El-Fayoum 22]
A. $3 + 60 + 5,000$	+ 10,000 + 200,000 +	7,000,000	
B. 3+60+500+	1,000 + 20,000 + 700	,000	
C. $3 + 600 + 5,00$	0 + 10,000 + 200,000	+ 7,000,000	
D. $3 + 600 + 5,00$	00 + 1,000 + 200,000 +	7,000,000	
7. What is the stand	ard form of eighteen n	nillion , six hundred fi	ve thousand?
			(El-Gharbia - Samanoud 22)
<b>A.</b> 18,605,000	<b>B</b> . 81,605,000	<b>C</b> . 1,860,500	<b>D.</b> 18,650,000
8. The standard form	n of the number 2 mill	ion,3 thousand,45 is	(Cairo 23)
<b>A</b> . 2,003,045	<b>B.</b> 2,345	<b>C</b> . 2,300,045	<b>D.</b> 2,000,300,045
9. Million is the sma	llest number formed f	rom — digits	ie .
			[El-Monofia – Berket El-Saba 24]
A. 6	B. 7	C. 9	<b>D.</b> 10
10. Ten million in the	e smallest number for	med from	digits. (Ismailia 24)
A. 6	B. 7	<b>C</b> . 8	D. 9
11. The milliard is th	e smallest number for	med from ———	digits. (Cairo 23)
A. 6	<b>B</b> . 7	<b>C</b> . 10	D. 9
<b>12</b> .756,324 ≈ —	(to nearest Ten T	housand)	[Giza – October Gardens 24]
A. 756,000	<b>B</b> . 760,000	<b>C</b> . 756,324	<b>D</b> . 700,000
<b>13.</b> 15,367,544 ≈	(rounding to n	earest Million)	(Alex Agamy 24)
A. 1,500,000	B. 10,000,000	<b>C</b> . 16,000,000	<b>D</b> . 15,000,000
			[El-Menia - Samalot 22]
	B. 7,000,000,000		
			st million? [Beni Suef 22]
A. 30,000,000		<b>C</b> . 32,000,000	
		9 to the nearest hund	Ired , it will be ————
			[Souhag 23]
<b>A.</b> 3,600	<b>B.</b> 3,700	<b>C.</b> 3,000	<b>D.</b> 3,620
	oe placed in the square	to make the mathem	atical expression correct?
6,201,351 > 6,20			(Ismailia 22)
<b>A</b> 0	B. 1	C. 2	<b>D</b> . 3

18. Which of the fo	llowing statements is	correct?	[Cairo - Heliopolis 23]
<b>A</b> . 4646 < 4664	B. 4646 > 4664	C. 4664 > 4664	<b>D.</b> 4646 = 4664
19. Which of the fo	llowing is a correct asc	ending order?	(Cairo - Heliopolis 23)
<b>A.</b> 757,573,508	8,735	<b>B</b> . 573,757,735,58	80
<b>C</b> . 573,580,73	5 ,757	<b>D.</b> 580,573,757,7	35
20. The place value	e of the digit 8 in the n	umber 3,846,321 is —	<del></del>
			[Cairo - Rod El-Farag 23]
A. Millions		B. Hundred Thousa	ands
C. Thousands		<b>D</b> . Ten Thousands	
21. The population	of a country is 56,724,03	3, then the place value	of the digit 6 is ————
			(Giza - Dokki 22)
A. Thousands		B. Hundred Thousa	ands
C. Millions		D. Ten Millions	
22. The value of the	e digit 5 in the number	8,135,712 is	(Cairo - Rod El-Farag 23)
<b>A</b> . 50	<b>B</b> . 500	<b>C.</b> 5,000	<b>D</b> . 50,000
23. A bee hive cont	ains 102,635 bees , the	number of bees to the	nearest ten
thousands is -	<del></del>	(	El-Monofia - Sers El-Layyan 23
<b>A</b> . 100,000	<b>B</b> . 10,000	<b>C</b> . 102,010	<b>D</b> . 12,090
3. Answer each of the	e following.		
1. List the following	numbers in a descen	ding order.	(Port Said 22)
900 thousands	,9 millions ,5 millions	and 7 hundred thousa	nds,500,223
2. Create a number	in the millions that is g	reater than 178,462,490.	(Cairo - Heliopolis 22)
3. List the following	g in an ascending orde	r:	[El-Beheira 22]
8,092,561,9,208	,111 ,7,534,786 ,8,650,3	36	
4. Arrange the follo	wing numbers in an a	scending order:	[El-Monofia - Sadat City 22]
1,282,756 , 3,012,	427,988,423,3,105,33	8	
5. Write the number	er 2,445,232,197 in expa	nded form.	
6. Round 556,536			
a. to the nearest	t Hundred		
<b>b.</b> to the neares	t Hundred Thousand –		
7. Decompose the f	ollowing number usin	g expanded form.	
3 million, 166 the	ousand,252		
Ť	712,549 , what digit is in	n the	
a. Hundreds pla		b. Ten Thousands p	lace?
c. Millions place			

# **General Revision**

## On Unit 2

1. Comple	te
-----------	----

1. If 3,000 - B = 2,000, then the value of B = -

[Cairo - Heliopolis 22]

2. ———— is the additive identity.

[El-Sharkia 22]

3. In the opposite bar model:

14,000			
n	7,000		

The value of n =

(Port Said 24)

## 4. Use the opposite bar model to solve the equation:

m = 350 = 650The solution:

(Giza 24)

## 5. In the opposite bar model:

750			
230	b		

The value of b = ----

[Luxor 24]

## **6.** The value of the symbol H in the equation H = 1,590 = 3,410 is

[El-Gharbia - Samanoud 22]

## 7. In the opposite bar model:

The value of the unknow	wn k =
THE VALUE OF THE WHITHIN	/VIII   -

	<
2,515	4,370

8. 284,615 - 196,392 = ---

[El-Dakahlia 22]

[Port Said 22]

## 9. In the opposite bar model:

10. If 853 - A = 751, then the value of A = -

[Damietta 22]

[El-Fayoum 22]

## 11. In the opposite bar model:

The	value	of h	=	

b		
9,901	1,000	

12. The value of the variable in the equation : b + 1,000 = 3,000 is —

(Souhag 22)

[Souhag 23]

**13**.854 + 0 = ----

## 17. In the opposite bar model:

B = ----

235		
200		В
	ſ	Souhag 23

#### Choose the correct answer.

The additive identity element is —

[Port Said 24]

- **A**. 0
- B. 1

C. 2

**D**. 3

2.14 + 8 = 8 + 14 is property.

[Giza - October garden 24]

- A. associative
- B. additive identity C. distributive 3.13 + 7 = 7 + 13, is the ——— property.
- D. commutative [Alex. 24]

- A. associative
- B. commutative
- C. additive identity
- D. otherwise

4.18 + 0 = 18property].

[Alex, 24]

- A. commutative B. associative
- C. additive identity D. distributive.
- 5.13 + 0 = 13, is the —

[Cairo - Khalifa and Mokattam 22]

- A. associative property
- **B.** commutative property
- C. additive identity property
- **D.** None of the previous
- 6. Which equation would be best to include in an explanation of the commutative property of addition? [Cairo 24]
  - A. 3+0=3

B. 2+4=4+2

C.5 + 11 + 5 = 16 + 5

- **D.** 10+3=7+6
- 7. Which of the following represents the commutative property in addition?

[El-Kalyoubia 22]

- **A.** 635 + 492 = 492 + 635
- **B.** 0 + 847 = 847

C. [18 + 2] + 16 = 36

D. 1 + 131 = 132

- 8.125,217 + 2,345
- 125,217 2,345

[Giza 23]

[Giza 23]

[Giza 23]

- A. >
- B. <

C. =

- 9.25 + 99 = 24 + -

- A. 24
- **B.** 25
- C. 99
- **D.** 100

- 10.3+5=5+-
- B. 2

**C**. 3

- A. 1

**D**. 5

- 11.35 + 0 = -
  - **A.** 35
- B. 0

C. 1

**D**. 350

- 12. If 614 X = 600, then X =
  - A. 11
- **B**. 12
- C. 16
- D. 14

[El-Sharkia 22] 13.613 - 247 = -**D.** 807 C. 366 B. 434 A. 567 +142[Alex. 23] **14.** 253 + [226 + 142] = [253 + -**D.** 368 C. 142 B. 226 A. 253 **15**. 6,199 + 8,049 = D. 4,428 **C.** 14,248 A. 41,248 **B**. 14,428 [Cairo - Rod El-Farag 23] **16.** 91.024 + 32.549 = -D. 123,654 **C.** 123,573 B. 321.547 **A.** 123,563 [Cairo 23] 17.8,000 - 2,345 =**C**. 5,655 **D**. 5,565 **B**. 6.345 A. 10.345 [Giza 23] **18.** If 500 + X = 625, then X = 625D. 225 C. 125 A. 1,125 **B**. 25

## 3. Answer each of the following.

- 1. Samir and Mohamed participated in a project. Samir paid 342,650 pounds, if the cost of the project is 668,500 pounds, how much did Mohamed pay? [Cairo Heliopolis 22]
- 2. A bridge of ants consists of 142 ants, and another bridge consists of 165 ants. How many ants are there in the two bridges together?
- 3. A road of 675 km length, if a train traveled a distance of 239 km from this road, what is the remaining distance of the road?

  [Giza 6<sup>th</sup> October 22]
- 4. The country has provided a vaccination against the corona virus. In the first stage,

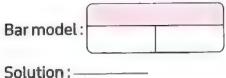
  1,653,465 people were vaccinated and 3,312,447 were vaccinated in the second stage.

  What is the total number of people vaccinated in both stages? [El-Monofia Quesna 22]
- 5. Ali bought a laptop for 7,250 L.E. and a mobile for 4,000 L.E. How much money did he pay?

  [Cairo Rod El-Farag 23]
- 6. If the population of Matrouh Governorate is 517,901 people and the population of South Sinai Governorate is 112,211 people, then what is the difference between the population of Matrouh and the population of South Sinai?
- 7. In the equation 710 + G = 930, find the value of G.

[Alex. - El-Montaza 23]

8. m - 35,462 = 2,741



[Ismailia 23]

9. In the equation K + 226 = 349, find the value of K.

[El-Menia 24]

# **General Revision**

## On Unit 3

#### 1. Complete.

1.35 kilograms and 86 grams =	—— grams	

[Cairo 24]

[Alex. 24]

(Ismailia 24) [El-Menia 24]

(Luxor 24) [Giza 24]

(Kafr El-Sheikh 24)

[Alex. 24] [Cairo 24]

[El-Beheira 24] [El-Menia 24]

[Giza - Dokki 22]

11.35 kg and 86 g = 
$$----g$$

(El-Kalyoubia 22)

(El-Dakahlia 22)

## 13. A week and two days = ——— days

(Suez 22)

14. A jug of 10 liters of water. How many milliliters does it have?

[Port Said 22]

## 15.4 minutes and 20 seconds = seconds

[Kafr El-Sheikh 22]

16.8 meters, 45 cm = ----- cm

(El-Favoum 22) [Alex. - West 23]

17. 9,250 meters = ----18. 9,000 mL = \_\_\_\_\_ liters

(Souhag 23)

## 19. Convert to the unit shown on the model.

5 kg 275 grams

grams

(Souhag 23)

## **20.** 8,000 grams = \_\_\_\_\_ kilograms

[Cairo - Rod El-Farag 23]

**21.** 3 kg and 258 g = ----- g **22.**3:25 + 6:42 = ----

(Cairo 23)

**23.** 5 weeks = — days

[Cairo 23]

## **24.** 6 m and 35 cm = ----- cm

(Giza 23) (Giza 23)

**25.** 9,000 mm = \_\_\_\_ cm

**26.** — m = 350 dm

[Alex. 23] (El-Sharkia - Diarb Nagm 22)

# 2. Choose the correct answer.

## **1.** 10 weeks = — days.

(Port Said 24)

A. 240

B. 70

C. 270

**D**. 600

2.9 minutes and 10 seconds = seconds.

[Cairo 24]

A. 310

**B**. 560

C. 550

**D**. 600

3.2 days =	-hours.		[Alex. 24]
<b>A.</b> 180	<b>B</b> . 21	<b>C</b> . 48	<b>D</b> . 30
4.4 hours =	— minutes.		[Alex. 24]
A. 40	<b>B.</b> 300	<b>C</b> . 240	<b>D</b> . 60
5.5 hours =	— minutes.		(Luxor 24)
A. 600	B. 24	<b>c.</b> 300	<b>D</b> . 500
6.1 day and 5 hours	= hours		[Cairo - Khalifa and Mokattam 22]
A. 29	<b>B</b> . 65	<b>C</b> . 15	<b>D.</b> 35
7.5L=m	ıL		[Giza 24]
<b>A</b> . 5,000	<b>B</b> . 500	<b>C.</b> 50	<b>D</b> . 5
8.13 liters and 30 m	L=mL		[Giza - 6 <sup>th</sup> October 22]
A. 1,330	B. 13,030	<b>C</b> . 43	<b>D</b> . 3,013
<b>9.</b> 5 kg =	g		[Port Said 24] [Cairo 24]
A. 5	<b>B</b> . 50	<b>C.</b> 500	<b>D</b> . 5,000
10.423 cm =			[Cairo - Heliopolis 22]
A. 23 m, 4 cm		B. 42 m, 3 cm	
C. 4 m, 23 cm		<b>D.</b> 3 m ,42 cm	
11.5,000 m =			[Kafr El-Sheikh 24]
<b>A.</b> 5 mm	<b>B</b> . 500 cm	<b>C.</b> 6 cm	<b>D.</b> 5 km
12.12 km <sub>3</sub> 45 m = -	m		(El-Monofia 24)
<b>A.</b> 1,245	B. 4,512	<b>C.</b> 12,045	<b>D</b> . 1,200,045
13. The best unit to	measure the distar	nce between two cit	ies is [Alex. 24]
A. meter	B. liter	C. mm	D. km
14. Using the relation	nship between uni	its of length , choose	e the correct answer to complete
the following tal	ole:		[Alex West 22]
	kilometer		entimeter
	60	60,000	?
<b>A.</b> 600	<b>B</b> . 6,000	<b>C</b> . 60,000	D. 6,000,000
<b>15</b> . 6,325 g = ——			(El-Dakahlia 22)
<b>A.</b> 6,000 kg,352	g	<b>B</b> . 63 kg, 25 g	
<b>C</b> . 60 kg ,325 g		<b>D</b> . 6 kg ,325 g	
16. The capacity of a	a juice can is 1 liter a	and 500 mL, then its	
milliliters =	mL		(Ismailia 22)

B. 1,500

**A.** 150

**D.** 1,005

**C.** 15,000

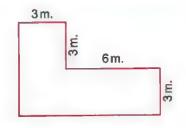
	17. Adel spends 6 hours at school. If we want to calculate Adel's school day in minutes							
	,we———			(Suez 22)				
	<b>A.</b> add 6 to 60	<b>B.</b> add 6 to 24	C. multiply 6 by 60	D. multiply 6 by 24				
	<b>18.</b> 2 days and 2 hou	ırs = ——— hours		(Port Said 22)				
	<b>A.</b> 22	B. 4	<b>C</b> . 62	<b>D.</b> 50				
	<b>19.</b> 8 kilometers , 45	meters = r	neters	(Souhag 23)				
	<b>A</b> . 845	<b>B</b> . 855	<b>C.</b> 8,000,045	<b>D</b> . 8,045				
	<b>20</b> . 5 weeks and 5 d	ays = ——— days		(Cairo - Rod El-Farag 23)				
	<b>A.</b> 55	<b>B</b> . 35	<b>C.</b> 40	<b>D.</b> 25				
	21.10 meters = -	centimeters		(Cairo 23)				
	<b>A</b> . 10	<b>B.</b> 100	<b>C</b> . 1,000	<b>D.</b> 7				
	<b>22.</b> 5 kg and 861 g =	g		[Cairo 23]				
	<b>A</b> . 5,861	<b>B.</b> 58,160	<b>C</b> . 5,000,861	<b>D</b> . 5,861,000				
	<b>23.</b> 3 liters = ———	milliliters		(Giza 23)				
	<b>A.</b> 3	<b>B.</b> 30	<b>C.</b> 300	<b>D.</b> 3,000				
	24.——— is a m	neasuring unit of mass	9.	(Giza 23)				
	A. km	B. Liter	C. Hour	D. kg				
	<b>25.</b> A week and 3 da	ys = ——days		(Cairo 24) (Souhag 23)				
	A. 7	B. 10	<b>C.</b> 13	D. 17				
3.	Answer each of the	following.						
	1. List the following	(El-Menia - Samalot 22)						
	8 m, 8,000 cm, 8	km,8 mm						
	2. The day is 24 hours, how many hours are there in 3 days?							
	3. Hossam sleeps 8	Hossam sleeps 8 hours each day.						
	How many minut	nany minutes does Hossam sleep each day?						
	4. Amany is a swimr	nany is a swimmer. She spends half of an hour every day swimming. How many						
minutes in total does she swim for during a 5-days?  5. A train covers 2 km in one minute, what is the distance the train covers in 10 minukilometers and in meters?								
							I. When will it end?	
							7. A fish tank with a	capacity of 50 liters is f
	more liters of water	er are needed to fill it u	p completely?					

## On Unit 4

#### 1. Complete.

- 3. The perimeter of the rectangle of 6 m length and 4 m width = \_\_\_\_ m [Alex. 24]
- 4. A rectangle has 7 cm wide, and 13 cm long, then its area = ——— cm<sup>2</sup> [Alex. 24]
- 5. A square has an area of 16 square centimeters, then its perimeter = ——— cm

  [Suez 22]
- 6. The length of the side of a square whose perimeter is 28 cm is ———— cm
- 7. Area of rectangle its length is 10 cm, width is 7 cm = ----- cm<sup>2</sup> [Cairo 24]
- 8. A square of side length 6 meters, then its perimeter = meters [Souhag 23]
- 9. A square of side length 3 cm, then its perimeter = ——— cm [Cairo Rod El-Farag 23]
- 10. A square of side length 5 meters , then its perimeter = ——— meters [El-Beheira 24]
- 11. A square of side length 8 cm, then the perimeter = ——— cm [Souhag 24]
- 12. A rectangle its length is 7 cm, and its width is 5 cm, then its area = cm<sup>2</sup>
- 13. A rectangle has length (L) and width (W), its perimeter = \_\_\_\_\_\_ (Cairo 23)
- 14. A carpet in the shape of a square of side length 3 m, its perimeter = ----- m (Giza 23)
- 15. Area of a square = side length × ——— [Ismailia 23]
- 17. The area of the opposite figure equals ——— m<sup>2</sup>



[Cairo 23]

- 18. The side length of the square = its perimeter ÷
- 19. The width of the rectangle = its area ÷
- 20. A square has a perimeter 12 cm, then its area is ————

#### 2. Choose the correct answer.

1. A rectangle its length is [L] and its width is [W], what is its perimeter?

[El-Menia 24] (Cairo - Khalifa and Mokattam 22)

- A. L+W
- B. L×W
- C. 2 × [L+W]
- D.  $[2 \times L] + W$

2. A rectangle its le	ength 8 cm , its wid	th 4 cm , then its perime	eter =	cm (Cairo 24)
<b>A</b> . 16	<b>B</b> . 32	<b>C</b> . 28	<b>D</b> . 24	
3. The width of a re	ectangular room is	4 m and its length is 6 m	1	
its area =			(Ka	fr El-Sheikh 24)
<b>A.</b> $24 \text{ m}^2$	<b>B.</b> 60 m <sup>2</sup>	<b>C.</b> 10 m <sup>2</sup>	<b>D.</b> $30  \text{m}^2$	
4. A square of side	length 1 cm, then i	its area =cm	2	(El-Menia 24)
A. 1	B. 4	<b>C</b> . 10	<b>D.</b> 14	
5. The area of the s	square of side lengt	th 8 cm is ——— cm	2 [Ka	fr El-Sheikh 24)
<b>A</b> . 32	<b>B</b> . 24	<b>C</b> . 64	<b>D</b> . 16	
6. A rectangle its le	ength = 7 cm , its w	idth = 5 cm , then its are	ea = ci	m <sup>2</sup> (Giza 24)
<b>A.</b> 12	B. 24	<b>C</b> . 35	<b>D.</b> 75	
7. Area of rectangle	e with length 9 cm	and width 6 cm =	—— cm <sup>2</sup>	El-Dakahlia 22)
<b>A.</b> 3	<b>B</b> . 30	<b>C</b> . 15	<b>D.</b> 54	
8. A rectangle of le	ngth 20 cm and wi	dth 10 cm , then its area	is equal	
tosq	uare cm.			[Damietta 22]
<b>A.</b> $2 \times 20 + 2 \times 1$	0	B. $20 + 10$		
<b>C</b> . 60		<b>D</b> . 200		
9. Area of a square	of side length 5 cm	$_{1} = cm^{2}$		[Cairo 23]
<b>A.</b> 20	<b>B.</b> 25	<b>C</b> . 15	<b>D.</b> 30	
10. Perimeter of a s	quare of side lengt	ch 7 cm = cm		(Cairo 23)
<b>A.</b> 42	<b>B.</b> 28	<b>C.</b> 27	<b>D</b> . 14	
11. The perimeter o	of the rectangle of 8	cm long and 2 cm wide	equals ———	<ul><li>(Souhag 23)</li></ul>
<b>A.</b> 20 cm	<b>B</b> . 20 cm <sup>2</sup>	<b>C</b> . 16 cm	<b>D.</b> $16 \text{ cm}^2$	
12. The perimeter o	of a square is 40 cm	then its side length =	cm	(Cairo 23)
A. 4	<b>B.</b> 1,600	<b>C.</b> 160	<b>D.</b> 10	
13. A rectangle has	length 30 cm and	width 5 cm , then its are	a = cr	n <sup>2</sup>
<b>A.</b> $5 + 30 \times 2$	<b>B.</b> 70	<b>C.</b> 150	<b>D.</b> 300	
14. Area of rectang	le = length ×			(Ismailia 23)
A. itself	B. width	C. 4	D. height	
15. The area of the	square whose side	length is 6 cm =	—_ cm <sup>2</sup>	(Souhag 23)
A. 11	<b>B.</b> 30	<b>C.</b> 24	D. 36	
<b>16.</b> The perimeter o	of the square whose	e side length is 5 cm is –	cm	(Giza 23)
<b>A.</b> 10	<b>B.</b> 15	<b>C</b> . 20	D. 25	
17. Area of the recta	angle with 7 cm lon	g and 3 cm wide equals	cm <sup>2</sup>	(Giza 23)
A. 20		<b>C</b> . 24		

18. A square of si	de length 8 cm , the	n its perimeter =	cm	[Alex. 23]
A. 16	B. 24	<b>C</b> . 32	D. 40	
19. A rectangle w	rith an area 30 cm <sup>2</sup> ,	if its length is 6 cm , then	its width equals	
<b>A</b> . 6 cm	<b>B.</b> 5 cm	<b>C.</b> 11 cm	<b>D</b> . 30 cm	
Answer each of	the following.			
1. A rectangular o	gymnassium with 7	meters long and 4 meter	s wide.	
Find its perime	eter.		(Cairo -	· Heliopolis 22)
2. A squared pict	ure with side length	8 cm , Hussein wants to	make a piece of	glass to
cover this pict	ure , what is the area	of the glass piece?	(El	-Kalyoubia 22)
3. A square-shap	oed room has a side	length 4 meters.		
What is the ar	ea of the ground of t	he room in square meter	rs?	(Souhag 22)
4. A rectangle of	length 5 cm and wid	Ith 3 cm. Find the perime	eter. (Cairo - Ro	od El-Farag 23)
		e whose length is 16 cm a		
is 14 cm	1000, 0., 0., 0., 0., 0., 0., 0., 0., 0.,	<b>3</b>		(Cairo 23)
	narden in a squared	shape with side length 6	m, what the area	a
of this garden				[Giza 23]
_	and the perimeter		6 cm.	
of the opposite		[Ismailia 23]		
A =	- · · · g · · ·		Ė	
D =			- <del></del>	
<b>-</b>				3cm.
			1.	2 cm.
8. Find the perin	neter of each of the f	ollowing figures.		(Souhag 23)
		1		
a.	4 cm.	b.	5cm.	
Som		5cm.		
6cm.		Volle		
9. The side length	th of a square is 7 cm	, find its:		(Ismailia 24
a. perimeter		<b>b.</b> area		
on permitteet				

## On Unit 5

#### 1. Complete.

11. 
$$(42 \times 15) \times ----= 42 \times (15 \times 25)$$
 [Giza 23]

#### 2. Choose the correct answer.

1. 
$$15 \times 17 = 17 \times 15$$
 represents the property. [Luxor 24]

4. If 
$$a \times 36 = 36 \times 5$$
, then  $a = \frac{1}{2}$  [Luxor24]

<b>6</b> .6×0=	_			[El-Menia 23]
<b>A.</b> 0	B. 1	<b>C</b> . 2	<b>D</b> . 3	
7. Which of the follo	wing represents the a	ssociative property?		
<b>A.</b> $11 \times 129 = 129$	× 11	<b>B.</b> $2 \times (5 \times 3) = (2 \times 5)$	i)×3	[El-Beheira 23]
<b>C.</b> $0 \times 17 = 0$		<b>D.</b> $(2 \times L) \times W$		
$8.5 \times 7 = 7 \times 5 \text{ the p}$	property is called ——			[El-Beheira 23]
A. associative	B. commutative	C. additive identity	<b>D</b> . none of t	he previous
9.25 × 32 = 32 ×			[8	El-Kalyoubia 23)
<b>A.</b> 32	<b>B.</b> 25	<b>C</b> . 30	<b>D.</b> 20	
<b>10.</b> 4 × 100 = ——				
<b>A.</b> 40	<b>B.</b> 400	<b>C.</b> 4,000	<b>D.</b> 40,000	
11. If 850 × m = 850	, then m =			(Ismailia 23)
<b>A.</b> 1	<b>B.</b> 850	<b>C.</b> 2	<b>D</b> . 0	
12. Which choice be	st shows the zero pro	perty of multiplication	? (Cairo	o - El-Nozha 23)
<b>A.</b> $1 \times 5 = 5$		$B. 9 \times 6 = 6 \times 9$		
<b>C.</b> $6 \times 10 = 60$		<b>D.</b> $0 \times 5 = 0$		
13.10 times the nur	mber 275 =			
<b>A.</b> 2,750	<b>B</b> . 27,510	<b>C.</b> 10,275	<b>D</b> . 275,000	
14.3 times the num	ber 8 is			[El-Menia 24]
A. 2	<b>B.</b> 14	<b>C.</b> 24	<b>D</b> . 54	
15.10 times the nur	mber 43 =			(Port Said 24)
<b>A.</b> 430	<b>B.</b> 4,300	<b>C.</b> 43,000	<b>D.</b> 430,000	
<b>16</b> . 640 hundreds =	tens			(Luxor 24)
A. 64	B. 64,000	<b>C</b> . 640	<b>D.</b> 6,400	
17. The number 18 is	6 times the number-			(Beni Suef 24)
<b>A</b> . 2	<b>B</b> . 3	C. 6	D. 9	
18.36 is —	times the number 9			(Port Said 24)
A. 6	B. 4	<b>C.</b> 5	<b>D</b> . 7	
<b>19.</b> The number 30 e	quals 5 times the num	ber——		[Cairo 24]
A. 3	B. 4	C. 6	<b>D</b> . 8	
<b>20.</b> 25 is 5 times as r	many as			(Port Said 24)
A E	P. 10	C 15	D. 125	

times the numb	er5	Cairo - Al-Khalifa and Al-Moka	ittam 23)
B. 6	<b>C</b> . 5	<b>D</b> . 40	
2 is 6 times the nu	mber		[Giza 23]
B. 9	<b>C</b> . 8	<b>D.</b> 5	
0 equals 5 times th	ne number	(Cairo - El-	Marg 23]
<b>B</b> . 5	<b>C.</b> 150	<b>D</b> . 25	
D meters high. A bi	ridge is 5 meters long	. How many times	
longer than the bi	ridge?	[Alex Al-Ag	gamy 23]
B. 4	<b>C.</b> 15	D. 10	
$a \cdot 6 \times b = 42$ , then	b =	[Alex	West 23]
<b>B.</b> 5	<b>C</b> . 6	<b>D.</b> 7	
-= 3,400		[Alex	West 23)
<b>B</b> . 10	<b>C.</b> 100	<b>D</b> . 1,000	
×100			[Giza 23]
<b>B.</b> 80	<b>C.</b> 48	D. 4,800	
×]×4		(So	uhag 23]
B. 1	<b>C.</b> 10	<b>D.</b> 5	
	B. 6 2 is 6 times the nu B. 9 D equals 5 times th B. 5 D meters high. A bit longer than the bit B. 4 16 × b = 42, then B. 5 -= 3,400 B. 10	B. 6 C. 5 2 is 6 times the number B. 9 C. 8 D equals 5 times the number B. 5 C. 150 D meters high. A bridge is 5 meters long longer than the bridge? B. 4 C. 15 D h 6 × b = 42, then b =	B. 6

## 3. Answer each of the following.

- 1. Sarah walked 5,000 meters every day for 9 days, what is the total number of kilometers that Sarah walked? (Cairo El-Shrouk 23)
- 2. Mariam bought 4 mobiles, the price of each mobile is 1,000 pounds, how much did
  Mariam pay ?
- 3. Ahmed bought 10 pens, if the price of a pen is 200 piasters, what is the price of all pens?
- **4.** Ali travelled 8 days continuously, he travelled 3,000 m each day. How many kilometers did he travel in all? [Souhag 23]
- 5. Ayman ate 4 figs in the morning. His older brother ate 3 times as many. How many figs did his brother eat?

  [Giza 6<sup>th</sup> October 22]
- **6.** Hany works 30 hours a week. If he gains L.E. 8 per hour. How much does Hany gain in a week?

# On Unit 6

1. Complete.	
1 is the only even prime number. [Cairo - El-Khalifa and El-	Mokattam 22) [El-Monofia 24]
2 is the smallest prime number.	(Ismailia 24)
3. The smallest even prime number is	(Souhag 24)
4. The number that has only two factors and their sum equals 8 is	
	[El-Monofia - Quesna 22]
5. The common factor of all numbers is	(Luxor 24) (El-Dakahlia 22)
6. The numbers 1, 3, 9, 27 are all factors of	[Damietta 22]
7. The number of factors of the prime number is	[El-Menia - Samalot 22]
8 is the common multiple for all numbers.	[El-Monofia - Sadat City 23]
9. The number 4 has factors.	
10. Write 3 multiples of 5,	[Beni Suef 24]
11. One of the common multiples of 2 and 3 is	[El-Menia 24]
12. The missing factor in the opposite rainbow is	12 1 2 3 4 12 -Monofia - Sers El-Layyan 23
13. The smallest prime number is	[Ismailia 24] [Cairo 23]
14. The G.C.F of 8 and 16 is	[Giza 23]
15. The factor pair 3 and 8 is for the number	
<b>16.</b> The G.C.F of 20 and 30 is	
17. If $4 \times 9 = 36$ , then is a multiple of the two numbers	and
<b>18.</b> If $3 \times 5 = 15$ , then 15 is multiple of and	[Giza 24]
19. If $7 \times 3 =$ , then is a multiple of the two r	numbers 7 and 3
20. The missing factor in the opposite factor T-chart is  21. The factors of 12 are	Factors of 18  1
21. The factors of 12 are	-

#### Choose the correct answer.

- The only even prime number is (Cairo 24)
  - **B**. 3

D. 6

2. Which of the following is a prime number?

[El-Beheira 24]

- A. 10
  - B. 15

- C. 19
- D. 21

- 3. The common factor of all numbers is

[El-Menia 24] [Port Said 24]

- B. 1

**C.** 2

[Cairo - Heliopolis 22]

- 4. Which of the following is NOT a multiple of 7? B. 63
  - **C.** 707
- D. 27

**D**. 3

- 5. Which is NOT a common multiple of 9 and 6?
- [Cairo El-Khalifa and El-Mokattam 22]

- A. 36
- B. 54
- C. 27
- **D.** 18
- 6. Which number is the greatest common factor [G.C.F] of 12 and 6?
  - A. 2
- **B**. 3

C. 6

- **D**. 12
- [Alex. West 22]

(Cairo 24)

[Cairo 24]

[Port Said 22]

(Giza 24)

[Port Said 24]

[Alex. 24]

7. The prime number has — factors only. [El-Dakahlia 22]

- A. 0
- B. 1

D. 4

- 8. The multiples of 6 is \_\_\_\_\_\_\_\_, A. 2,4,6,8
  - B. 6,12,18,24
- C. 4,8,12,16
- D. 3,6,9,12

9. The number 27 is a multiple of the number —

[El-Monofia 24]

- B. 8

- D. 2
- 10. The number whose factors are 1,3 and 9 is \_\_\_\_
- [El-Menia 24]

- B. 9

- **C**. 12
- **D**. 13
- 11. The number \_\_\_\_\_\_ is a factor of the number 63

- B. 9

- C. 11
- D. 12

- **B**. 5

C. 7

D. 11

13. The list of all the factors of 16 is —

**12.** \_\_\_\_\_ is a factor of 63

**18.** \_\_\_\_\_ is a factor of 14.

[Beni Suef 22]

- A. 1,16
- B. 2, 4,8
- C. 1, 2, 4, 8, 16
- **D**. 1, 2, 4, 6, 8, 16

- 14. \_\_\_\_\_ is the smallest prime number.
- [El-Monofia Sadat City 23]

- **A**. 0
- B. 1

C. 2

**D**. 3

- 15. are the factors of 6
  - B. (1,6)
- C. (1,2,3,6)
- D. (1,2,4,6)

- A. (2,3)

\_\_\_\_is a multiple of 10

- 16. The number —
- **B**. 5

- C. 15
- **D.** 20

- A. 2 17. The number 16 is a common multiple of —

- A. 2 and 4
- **C.** 5 and 3
- D. 8 and 9

- **B.** 7 and 2
- [El-Monofia Sadat City 23]

- A. 2
- B. 3
- C. 4

**D**, 5

19. The even numb	er which is a mul	tiple of: 3,4,6 togethe	r is	(Aswan 23)
<b>A.</b> 20	<b>B</b> . 18	<b>C.</b> 28	<b>D.</b> 12	
20is a	multiple of 2			(Aswan 23)
A. 3	<b>B.</b> 5	<b>C.</b> 11	<b>D</b> . 8	
21. Which of the fol	llowing is a prime	number?		[El-Menia 23]
<b>A</b> . 4	<b>B</b> . 7	<b>C.</b> 15	<b>D.</b> 18	
22is a	common multiple	e of all numbers.		[El-Menia 23]
<b>A</b> . 0	B. 1	<b>C</b> . 2	<b>D.</b> 3	
23. The smallest of	dd prime numbei	ris		(Cairo 23)
<b>A</b> . 0	B. 1	<b>C.</b> 2	<b>D.</b> 3	
24.25 is a multiple	of			(Cairo 23)
<b>A.</b> 5	B. 7	<b>C.</b> 9	<b>D</b> . 10	
25.30 is a multiple	of			[El-Beheira 23]
<b>A.</b> 8	<b>B</b> . 7	C. 6	D. 4	
26. The number —	is a facto	or of the number 8	(Ca	airo - El-Salam 23)
<b>A</b> . 16	B. 24	<b>C.</b> 32	D. 4	
Answer each of the	e following.	_		
1. Find the G.C.F of 2	25 and 35			(Giza - Dokki 22)
2. Write all factors	of the number 24	, then decide if the nun	nberis	
a prime or comp	osite.		(Giz	a - 6 <sup>th</sup> October 22)
3. Write the commo	on factors of 12 ar	nd 18, then find the grea	atest	
common factor [	G.C.F].			[El-Sharkia 22]
4. Find the G.C.F of	14 and 21			(El-Monofia 24)
5. Find the G.C.F of	16 and 24		(Ale	ex. 24) (Ismailia 24)
6. Find the G.C.F of	20 and 15			[Port Said 24]
7. Find the G.C.F of 3	30 and 45			(Ismailia 22)
8. An even number	between 20 and	30 some of its factors		
include:1,2,4	, 7 and 14. What is	it?		(Suez 22)
9. Find 4 multiples	of the number 9			(El-Monofia 23)

## On Unit 7

#### 1. Complete.

1. The product of: 5 × 2,523 is equal to \_\_\_\_\_

[Aswan 23]

 $2.512 \div 8 = -$ 

[El-Kalyoubia 23]

 $3.363 \div 3 = -$ 

[El-Menia 24]

 $4.535 \div 5 = -----$ 

[Giza 24]

5.778 ÷ 2 = ----

(Giza 24)

 $6.5 \div 4 = ----$ , remainder

(Alex. 23)

7. In the opposite model:

(Souhag 23)



 $8.5 \times 467 = 5 \times 400 + 5 \times ----+5 \times 7$ 

(Ismailia 23)

**9**, 4,000 ÷ 4 = ----

[Cairo - El-Nozha 23]

 $10.23 \div 5 = 4 R$ 

[Cairo 23]

11.912 ÷ 3 = ----

[Alex. - West 23]

12.550 ÷ 5 = ---

[Giza - Awseem 23]

**13.** If  $641 \times 7 = 4,487$ , then  $4,487 \div 7 = -----$ 

(Giza 23)

14.26  $\div$  5 = — and remainder —

(Ismailia 24)

15.17 × 6 = -

[Cairo 24]

**16.** The quotient in 480  $\div$  10 = 48 is \_\_\_\_\_

(Souhag 23) [Alex. - El-Montaza 23]

17. If 770  $\div$  10 = 77, then the divisor is \_\_\_\_\_

(Cairo 23)

**18**. 38 ÷ 6 = ——— R2

19.606  $\div$  6 = -

[Cairo - Heliopolis 23]

 $20.8 \times ----= 8 \times 600 + 8 \times 50 + 8 \times 3$ 

- 21. The model 5
  - 5×100=500 5×3=15
- **22.** If  $632 \times 4 = 2,528$ , then  $2,528 \div 4 = -$

[Alex. 24]

[Cairo 24]

#### Choose the correct answer.

1.153  $\div$  3 = 51, then the divisor is —

[Port Said 24]

- B. 51

represents the problem ----

D. 0

10

- 2. In the operation  $79 \div 11 = 7 R 2$  the divisor is A. 2
  - B. 7

C. 11

D. 79

- $3.412 \div 4 = -$ A. 12
- **C**. 103

[El-Menia 24]

- **B.** 123
- D. 13

4.456 × 4 =			- 40	-	ort Said	24]
<b>A.</b> 1,823	<b>B</b> . 18,323	<b>C.</b> 1,824	<b>D.</b> 18	3,564		
5. In the equation A. 35	n: 35 ÷ 5 = 7, the di <b>B</b> . 5	visor is	(El- D. 1	Monofia - Sa	dat City	23]
6.939 ÷ 3 =					(Aswan	23)
A. 101	<b>B.</b> 303	<b>C.</b> 313	D. 19	71		
7.125 × 5 =					(Cairo	23)
A. 625	<b>B.</b> 130	C. 605	<b>D.</b> 50	05		
8.240 ÷ 4 =				[Et-	Beheira	23]
A. 6	<b>B.</b> 60	<b>C</b> . 8	D. 40	0		
9. The opposite n	nodel represents th	e product 7 × 26			(Cairo	24]
then the miss	ing value in the mod			20	6	
<b>A</b> . 6		<b>B.</b> 7	7	140	_	-
C. 42		<b>D</b> . 420				
	alue in the opposite	e bar model			[Alex.	
represents —		/00		20	7	
<b>A.</b> $3 \times 7 = 21$		<b>B.</b> $30 \times 20 = 600$	30	30×20 = 600	_	_
<b>C.</b> $30 \times 7 = 210$	)	<b>D.</b> $20 \times 7 = 140$				
11. In the area mo	del 17 × 40			*	ort Said	24]
, the missing r	number =	-		10	7	
<b>A.</b> 70		B. 47	40	400	?	
<b>C</b> . 280		<b>D</b> . 17				
		ne product of 7 × 36		•	Monofia	<b>24</b> J
	sing value in the mo			30	6	
A. 6		B. 7	7	210		-
C. 42		D. 420		(=, ,		20
	model shows the pr	roduct of 36 × 4		-	Monofia 6	<b>Z4</b> J
	ie of X =	B. 24		30		
<b>A.</b> 120 <b>C.</b> 18		D. 144	4	120	Х	
	o model ED v A	D. 144		(CI_I	Monofia	7/1
14. In the opposite $x = -x$	.e model 52 ^ 6			50		2
A. 6		<b>B</b> . 12	6	300	>	
C. 60		<b>D.</b> 52	ı L			
	model shows the p	roduct of 7 × 36		(El-	Beheira	24]
then the valu				30		6
A. 6		<b>B.</b> 7	7	210		х
C. 42		<b>D.</b> 420	L			
	e opposite model o			(Cairo - E	l-Salam	23)
	sult of 369 $\div$ 3, then		-	100	20	3
A. 123		<b>B</b> . 9	3	300	60	М
C. 3		<b>D.</b> 396	L			

17.505 ÷ 5 =

[Cairo - El-Salam 23]

A. 510

B. 11

**C.** 101

D. 21

**18.** The divisor in the operation 91  $\div$  7 = 13 is \_\_\_\_\_

[Giza - Abo El-Nomros 23]

A. 7

B. 13

**C.** 75

**D**. 91

19. Which of the following represents  $35 \times 6$ ?

[El-Kalyoubia 23]

[El-Monofia 23]

**A.**  $[5 \times 6] + [30 \times 6]$ 

**B.**  $(5 \times 6) + (3 \times 6)$ 

C.  $[50 \times 6] + [3 \times 6]$ 

 $20.200 \div 2 = ---$ 

**D.**  $[50 \times 6] + [30 \times 6]$ 

A. 1

B. 10

**C.** 100

**D**. 2

21. If  $605 \div 10 = 60 R 5$ , then the divisor is –

[El-Monofia - Quesna 23]

A. 5

B. 10

C. 60

**D.** 605

**22.** If 37 oranges are distributed equally among 5 plates, how many oranges will be left?

[El-Monofia 23]

A. 5

B. 2

C. 7

**D**. 0

23.26 ÷ 4 = ---

(Ismailia 23)

30

180

A. 5 R 5

B. 6R2

C. 7R2

D. 4R2

24. The opposite model represents the product of 32 × 6, then the missing value in the model is

(Cairo 23)

A. 6

B. 12

C. 42

D. 8

25.21 × 4 = ----

[Cairo - El-Nozha 23]

A. 84

**B.** 123

C. 153

D. 68

6

## 3. Answer each of the following.

- 1. If the mass of a box is 124 kg, then find the mass of 5 boxes with the same mass. [El-Monofia Sadat City 23]
- 2. By using an area model strategy, solve the problem that follows:

  The route that the river bus travels is 58 km long. How many kilometers does the river bus travel if it follows this route 9 times daily?

  [Aswan 23]
- 3. Rashida saved 545 L.E. to buy a toy. She did this by saving 5 L.E. every day. How many days did she have to work to save enough money to buy the toy?

  [Aswan 23]
- 4. There are 72 students in the playground, and we need to divide the students into teams, so that each team includes 9 students. How many teams can be formed?

(El-Beheira 23)

5. A sweet box filled with 15 sweet pieces, what is the number of sweets in 7 boxes?

(El-Kalyoubia 23)

**6.** Find the quotient of:  $246 \div 6 =$ 

[Alex. - First Montaza 23]

7. Ahmed has 84 stickers, he distributed them equally among 7 of his friends, what is the share of each one?

[Cairo - El-Nozha 23]

## On Unit 8

#### 1. Complete.

#### 2. Choose the correct answer.

## 1. What is the first step of solving $12 + 30 \div 6$ ?

**A.** 
$$12 + 30$$

## 2. Which of the following equals 9?

A. 
$$25 \div 5 + 4$$

**B.** 
$$25 - 10 - 4$$

C. 
$$3 \times 3 + 2$$

D. 
$$8 - 2 \times 3 + 1$$

**A.** 
$$3 \times 1 + 2$$

B. 
$$12 + 6 \div 3$$

C. 
$$18 - 3 \times 4$$

D. 
$$24 \div 6 - 2$$

[Giza 23]

[Alex. 24]

[Alex, 24]

6.20 ÷ 4 – 3 =

[Alex. - El-Montaza 23]

- A. 20
- B. 6

**C**. 2

D. 9

- 7.12 + 6  $\div$  3 = -
- B. 6

- **C**. 1
- [El-Monofia Berket El-Sabaa 23] **D.** 16
- 8. Which is the first step in evaluating  $18 15 + 3 \times 8 2$ ?

[Ismailia 23]

- A. 18 15
- **B.** 15 + 3
- **C**. 3×8
- D.8 2

9.3 + 2 × 5 = ----

(Souhag 23)

- **A.** 13
- B. 14

- **C**. 10
- **D**. 25

10.4 + 10 × 2 – 1 =

(Souhag 23)

- A. 41
- **B**. 27
- **C**. 23
- D. 14

11.5+2×3=----

(Giza 23)

[Giza - Awseem 23]

[Alex. - Al-Agamy 23]

[Cairo - El-Nozha 23]

[Cairo - El-Nozha 23]

[Cairo - El-Shrouk 23]

- **A.** 10
- B. 6

**C.** 11

**D**. 8

- $12.9 + 2 \times [15 \div 5] = -----$
- 11 0.10

- **A.** 15
- **B**. 21
- **C**. 11

D. 18

13.5 × 4 + 6 = ----

[Alex. - West 23]

- **A**. 26
- **B.** 25
- **C.** 50
- **D**. 34

**14**. 24 ÷ [4 – 1] + 2 =

D. 7

- **A.** 10
- B. 9

**C**. 8

\_, ,

- **A**. 8
- B. 16
- C. 2

**D**. 0

16. [8 + 2] ÷ 2 = ----

15.18 ÷ 3 + 4 - 2 = ----

- A. 4
- **B**. 5

C. 7

D. 12

17.6×4-4=----

- A. 15
- **B**. 20
- C. 24
- D. 64

## 3. Answer each of the following.

1. Use the order of operations to find:  $7 + 12 \times [4 + 6]$ 

[Cairo 23]

2. Find the value of:  $16 \div 4 - 2$ 

[Giza 23]

3. Find the value of:  $25 - 3 \times 5 + 2$ 

- (Cairo 23)
- **4.** Ahmed walked 5 kilometers every day for 3 weeks. The next week he walked 50 kilometers. How many kilometers did he walk over those 4 weeks?





## Cairo Governorate



#### El-Nozha Education Directorate New Egyptian Language School

#### 1. Choose the correct answer.

1.32,000 = ---- Thousands

**A.** 3,200

**B.** 320

**C.** 32,000

**D.** 32

2.8 m. + 23 cm. = ---- cm

A. 31

**B.** 238

C. 328

D. 823

3. The perimeter of square is 40 cm. then its side length = ——— cm.

A. 20

B. 80

C. 400

D. 10

4. is the only even prim number.

**A**. 0

B. 1

C. 2

**D**. 3

A. 4

B. 6

**C**. 8

D. 9

6. The number 5,648 approximated to the nearest Ten is ————

A. 5,640

**B**. 5,600

**C**. 5,658

D. 5,650

7. The value of the digit 6 in 34,260,478 is \_\_\_\_\_

A. 6,000

**B.** 600,000

C. 600

**D.** 60,000

### 2. Complete the following.

1. The smallest number that can be formed using the numbers 0,1,2,3,5,4,6,7 is \_\_\_\_\_\_

2. B + 4,216 = 26,453, then B =

**3.** A week and 3 days = ——— days

4.45 is \_\_\_\_\_ times the number 5.

5. The numbers 1, 3, 9, 27 are all factors of —

6. The identity number of multiplication is

7. In the equation  $35 \div 5 = 7$ , the divisor is —

8. The perimeter of a rectangle of 8 cm long and 2 cm wide equals —

#### 3. Choose the correct answer.

1. The number 4 has — factors.

**A**. 0

B. 1

C. 2

**D**. 3

2. Area of a rectangle its length 7 cm, width is 3 cm = - cm<sup>2</sup>

A. 10

B. 20

**C**. 73

3.3L+2L+500 ml	_=mL.		
<b>A</b> . 505	<b>B.</b> 1,000	<b>C</b> . 5.5	<b>D</b> . 5,500
4. The G.C.F of 20 an	ıd 30 is ————		
<b>A</b> . 50	<b>B</b> . 60	<b>C</b> . 600	<b>D</b> . 10
5. In the bar model I	M =		100
<b>A</b> . 135		<b>B.</b> 3,500	35 M
<b>C.</b> 65		<b>D.</b> 56	
6. The area of the so	quare whose side le	ength is 6 cm =	— cm <sup>2</sup>
<b>A.</b> 12	<b>B</b> . 24	<b>C</b> . 36	<b>D</b> . 60
7. The smallest odd	prime number is -		
A. 1	<b>B</b> . 2	<b>C</b> . 3	D. 4
Answer the following	ng questions.		
1. Find the quotient	of 246 ÷ 6 =		
•		a mobile for 4,000 L.E. ho	w much Money did he pay
3. Use the order of o	•		
4. List all multiples	•		
		STILL	
2 Caire	Governorace		ducation Directorate
Choose the correct	answer.		
		nd 127 in standard form -	
<b>A.</b> 1,235,000,127	<b>B.</b> 1.235.127	<b>C</b> . 1,272,351	<b>D</b> . 1,235,127,000
2. The number—		• •	
A. 15	B. 2	<b>C.</b> 51	D. 49
		er 2,476,217 is ————	
A. 6	<b>B</b> . 600	C. 6,000	<b>D</b> . 60,000
		m long and 2 cm wide e	•
A. 16	<b>B.</b> 20	_	<b>D.</b> 10
			<b>U.</b> 10
5.5 $\times$ 7 = 7 $\times$ 5 the p		C. commutative	D. otherwise
	•		
		500 mL, then its capac	<b>D.</b> 150,000
A. 150	B. 15,000	<b>C</b> . 1,500	<b>U.</b> 130,000
7. A week and 5 days			D 17
A. 7	<b>6</b> . 1.5	C. 12	D. 17

## **Directorates Exams**

## 2. Complete the following.

1. If  $641 \times 7 = 4,487$ , then  $4,487 \div 7 =$ 

2.24 is \_\_\_\_\_ times the number 4

4. b + 1,000 = 3,000, then b = ----

5. The number 5,648 approximated to the nearest ten is \_\_\_\_\_

**6.** 15 + 20 ÷ 4 = ----

8. Factors of 18 are

#### 3. Choose the correct answer.

1. The multiplicative identity element is —

A. 1

B. 0

**C**. 2

D. 3

2.4 hours = minutes

A. 240

B. 96

C. 14

D. 60

3. Subtract 613 - 247 =

A. 567

B. 434

C. 366

**D.** 807

4. Which of the following is a multiple of 6?

A. 93

**B**. 62

C. 42

**D**. 101

**5.** 8 km. , 45 m. = ----- m.

A. 845

**B.** 855

**C.** 8,000,045

**D.** 8,045

6.707 ÷ 7 =

A. 11

B. 101

**C**. 110

**D.** 100

## 7. In the opposite bar model:

The value of the number c =

7,620 c 4,310

**A.** 3,000

**B**. 200

**C.** 3,310

**D.** 2,310

## 4. Answer the following.

1. Hany has 2,532 pounds, he divides the money equally between his 3 friends. Find the share of each one of them.

## 2. Arrange the following numbers in a descending order:

654,311 , 654,301 , 599,310 , 654,310 , 604,320

- 3. Find G.C. F of 16 and 20
- 4. Apply the properties of addition to solve the problems:

36 + 80 + 64 + 20

## Giza Governorate



#### **El-Agouza Educational Directorate** El-Manar Islamic Language School

#### 1. Choose the correct answer.

1.5 × 4 + 6 = ----

A. 26

B. 25

C. 24

**D**. 30

2. The place value of the digit 3 in 12,537,265 is ———

A. Millions

B. Ten Millions

C. Thousands

D. Ten Thousands

3. The smallest prime number is —

A. 0

B. 1

C. 2

**D**. 3

**4.** 13 + 7 = 7 + 13 is \_\_\_\_\_ property.

A. associative B. commutative

C. additive identity D. distributive

5. The divisor in the operation  $55 \div 5 = 11$  is –

A. 55

B. 11

C. 5

D. 1

**6.** 2 kg = ---

A. 20

**B.** 200

**C.** 2,000

D. 12

7.30 is 6 times the number -

A. 3

B. 4

C. 6

**D**. 5

## 2. Complete the following.

1. The additive identity is —

2. The numbers 1, 2, 3, 6 are all the factors of ———

3. 2 weeks = ----- days

4.1,600 ÷ 4 = ---

**5.** 3.200 + 4.300 = ---

6.700 Tens = ----

7.34 × ----= 3.400

**8.** The area of a rectangle whose length 5 cm, width 3 cm = --

#### 3. Choose the correct answer.

1. A square of side length 5 cm, then its perimeter = cm

A. 5

B. 10

C. 20

**D.** 50

 (to nearest Hundred) 2.7357 ≈ ---

A. 300

B. 400

**C**. 7,000

D. 7,400

#### **Directorates Exams**

3.6 × 0 =

A. 0

B. 1

C. 2

**D**. 3

4.6L=---mL

A. 6

B. 60

C. 600

**D**. 6,000

5. — is a multiple of 3

A. 7

**B**. 8

C. 9

D. 10

**6**. 632 + [225 + 142] = [632 + ------] + 142

A. 225

B. 142

C. 632

**D**. 0

7.21 × 4 =

A. 84

**B.** 123

**C**. 153

D. 68

#### 4. Answer each of the following.

1. Find the G.C.F of 10 and 25?

2. An ant walks 50 km every day. How many kilometers does it walk in 10 days?

3.35,896 - 21,675 =

**4.** There are 250 tourists divided into equal groups, if each group has 5 tourists. How many groups will be there?

# Giza Governorate



Haram Educational Directorate
The Egyptian International School

#### 1. Choose the correct answer.

1.2,700 ÷ 3 = ----

A. 900

B. 90

C. 9.000

D. 9

2.422 cm = ---

A. 22 m , 4 cm

B. 42 m , 2 cm

C. 4m, 22 cm

D. 3 m , 42 cm

A. 5

B. 4

**C.** 15

**D**. 16

4. Which of the following equals 24?

**A.**  $3 \times 3 + 5$ 

**B.**  $120 \div 5$ 

C. 6×6

 $D.8 + 16 \div 8$ 

**5.**1 day and 3 hours = ——— hours.

A. 27

**B**. 65

C. 15

**D**. 35

6.14 + 7 = 7 + 14 is ----

A. associative property.

B. commutative property.

C. additive identity property.

D. none of the above.

7. What is the fir	rst step of solving 12 + 3!	5 ÷ 7?	
<b>A</b> . 12 + 35	B. 12 ÷ 7	<b>C</b> . 35 ÷ 7	<b>D.</b> 12 + 7
2. Complete the fo	ollowing.		
1.5,000 - B = 4,	000 , then the value of B	3 =	
2. The number 4	456,518,943 to the neares	st Million is ————	
3. ———is 1	the only even prime nun	nber.	
4. The divisor in	384 ÷ 8 = 48 is ———		
5. The standard thirty-six is—		ght million , fourteen t	housand , nine hundred
6. ——— is	the common factor for a	all numbers.	
<b>7</b> . 2 kg = ——	— g		
<b>8.</b> ——is	the additive identity.		
3. Choose the cor	rect answer.		
1. The capacity of	fajuice can is 2 liters and !	500 mL, then its capacity	y in milliliters = ml
<b>A</b> . 150	<b>B</b> . 2,500	<b>C.</b> 15,000	<b>D</b> . 1,005
2. List all the fac	ctors of 16		
A. 1+16	B. 2,4,8	C. 1,2,4,8,16	D. 1,2,4,6,8,18
3.1 week =	—— days.		
A. 8	B. 7	C. 11	D. 14
4.45 is	— times the numbers 5.		
A. 6	B. 9	<b>C</b> . 5	<b>D</b> . 40
5. A rectangle of	f length 5 cm , width 3 cr	m , then its area is ——	cm <sup>2</sup>
<b>A.</b> 16	<b>B.</b> 15	C. 8	<b>D</b> . 2
<b>6.</b> 8,526,549 ≈ −	(to the nearest	: Million]	
A. 900,000	B. 9,000,000	<b>C.</b> 9,000,045	<b>D</b> . 7,045
<b>7</b> .65.367.290 —	30.000.000		

### 4. Answer the following questions.

A. <

- 1. Find the G.C.F of 20 and 30?
- **2.** Apply the properties of multiplication to find  $2 \times 6 \times 5$

B. >

**3.** Samir and Mohamed participated in a project. Samir paid 342 pounds. If the capital of the project is 500 pounds, how much did Mohamed pay?

**C**. =

4. Find the product of  $70 \times 22$ 

D. otherwise

## Alexandria Governorate



#### **West Educational Zone Mathematics Supervision**

#### 1. Choose the correct answer.

1.285 + 0 = 285 using the ——	property
------------------------------	----------

A. commutative B. associative

C. additive identity D. otherwise

2.4 liters , 325 mL = ---- mL

**A**. 235

**B.** 4,325

C. 329

**D.** 725

3. The value of the digit 8 in the number 28,746,509 is

**A.** 8,000

**B.** 8,000,000

**C**. 800,000

**D**. 80,000

4. 6,000 Thousands = — Millions

**A**. 6,000

**B**. 60

C. 6

**D**. 600

5. The area of the rectangle of length 8 cm and width 5 cm = — ----- cm<sup>2</sup>

**A**. 3

**B.** 13

C. 26

**D.** 40

6. In the equation  $5 \times m = 30$ , the value of m = -

A. 6

B. 4

**C**. 5

**D**. 8

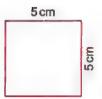
#### 7. The perimeter of the opposite

A. 10

B. 15

C. 20

D. 25



## Complete each the following.

- 1. The common multiple for all numbers is ———
- 2. The number 6,824  $\approx$  [to the nearest Thousand]

4. In the opposite bar model

m = -

7,869 m 5,358

- 6. The perimeter of the rectangle = (Length + width) × —
- 7. The smallest number formed from the digits 2,7,0,6 and 4 is —
- The smallest prime number is ——

### Choose the correct answer.

- 1.3 days = ----- hours.
  - A. 24
- B. 48
- **C**. 72
- D. 96
- The common factor of all numbers is
- B. 1

C. 2

**D**. 3

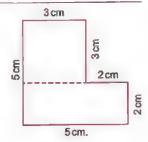
- 3. If  $24 \div 6 = 4$  then the divisor is
  - A. 6
- B. 24
- C. 4
- **D**. 30

- 4. The number is a multiple of 5
  - A. 14
- **B**. 20
- C. 16
- D. 28
- —— is 2 times the number 9 5. The number —
  - A. 11
- **B.** 16
- C. 20
- D. 18
- **6.** The place value of the digit 4 in the number 243,268,915 is -
  - A. Thousands
- B. Ten Millions C. Ten Thousands
- D. Millions
- 7. Milliard is the smallest number formed from ———— digits.
  - A. 7
- **B**. 8
- C. 9

D. 10

## 4. Answer the following questions.

1. Calculate the perimeter and the area of the opposite shape.



2. Use the order of operations to find the value of:

$$4 \times 5 - 12 \div 3$$

3. Use the opposite area model to find

the product of

	20	4
10		_
3	_	_

4. Find the factors 12 and the factors of 18 then find the G.C.F of 12 and 18

Factors of 12:

Factors of 18:

The common factors: —

G.C.F = ----

## El-Kalyoubia Governorate



#### **Maths Supervision**

1.	Choose	the	correct	answer
-	2110030	10.0		4114114

1	The place val	ue of the digit 5	in the number 1	5 /20 221 ie
- 44	ille blace val	ב ווטוט פון וו פיטוע	III the number i	2.4ZU.Z3115

A. Thousands

B. Ten Thousands C. Millions

D. Ten Millions

2.30 hundreds = -

**A.** 3,000

**B**. 300

**C.** 30

**D**. 3

3. The number 35,618  $\approx$  ———— (to the nearest Hundred)

**A.** 35,700 **B.** 35,600

**C.** 36,000

**D**. 37,000

4. The G.C.F of the two numbers 6 and 12 is

B. 12

C. 24

D. 36

5. The remainder of the division 35 ÷ 6 is —

**B**. 3

C. 4

**D**. 5

**6.** The perimeter of a rectangle where its length is 5 cm and its width is 3 cm = -

A. 8

**B**. 15

C. 16

**D**. 20

 $7.8,000 \, \text{m} = -$ 

A. 8

B. 80

C. 800

**D.** 8,000

## 2. Complete the following.

3. Complete the bar model: n - 251 = 347

4. If  $6 \times m = 42$ , then m = -

#### Choose the correct answer.

1.1,976,180 1,976,081

A. <

B. >

**D**. ≤

2. A rectangle of 3 cm wide and 4 cm long, then its area = -— cm²

A. 16

B. 14

C. 7

3.8 × 20 = ----

A. 16

B. 160

C. 1.600

**D**. 16,000

4. A prime number the sum of its factors is 20, then the number is

A. 11

**B**. 13

C. 17 D. 19

5. Five bags there are 12 balloons in each bag, if 20 balloons are used, then the expression of the left balloons is —

**A.**  $[5 \times 12] + 20$  **B.**  $[5 \times 12] - 20$  **C.**  $[5 \times 20] - 12$ 

**D.**  $[12 \times 20] - 5$ 

 $6.4 \times 7 = 7 \times 4$  is called — property.

A. commutative

B. associative

C. additive identify element

D. multiplicative identity element

7.  $\div$  2 = 800

A. 40

B. 400

**C**. 1,600

D. 16

4. Answer the following questions.

1. Yasser saves 145 monthly. How many pounds he will save in 5 months?

The perimeter = 20 cm

2. In the opposite figure :

Find the value of A

- 3. A tourist agency transported 7,000 tourists in two days , it transported 3,000 tourists in the first day. How many tourists it transported in the second day?
- 4. Dalia distrusted 424 glasses among 4 boxes. Find the number of glasses in each box.

## El-Sharkia Governorate



Amro Ibn El-Aass

Choose the correct answer.

1.3 × 400 = ---

**A.** 1.200

**B**. 120,000

C. 12,000

D. 120

2. The greatest common factors between 6 and 3 is

B. 1

C. 0

D. 9

3. The width of a rectangle is 4 m and its length is 6 m, then its area = -

A. 24

**B**. 60

C. 10

**D**. 30

The additive identity is ——

A. 1

B. 0

C. 2

**D.** 10

5. If 222 + X = 482, then the value of the X = -

A. 260

**B**. 370

C. 471

6. The place value of the digit 2 in the number 7,213,455,686 is -

- A. Millions
- **B.** Ten Millions
- C. Miliards
- D. Hundred Millions

 $7.5,000 \, \text{m} = -$ 

- **A.** 5 mm
- **B**. 500 cm
- C. 6 cm
- **D.** 5 km

8. The prime number has only ———— — factors.

- A. 1
- **B**. 2

**C**. 3

D. 4

**9.** The value of the digit 8 in 2,385,435 is -

- **A.** 80,000,000
  - **B**. 80,000
- C. 800
- **D**. 8

**10**. 2 hours = —— --- minutes

- **A.** 240
- **B**. 360
- C. 60
- **D.** 120

11. A rectangular room is 5 meters long and 4 meters wide. Its perimeter = -

- A. 20 m
- B. 18 m
- C. 9 m
- **D.** 40 m

**12.** The sum 4,690 + 2,524 = -

- **A.** 6,214
- **B**. 2,180
- C. 7.113
- D. 7,214

13.6 hundred millions =

- **A.** 60,000,000 **B.** 600,000,000
- **C.** 600,00
- **D**. 600

14.5 × 24 = 24 × 5 represents the -----— property.

- A. associative B. commutative
- C. identity
- D. distributive

## 2. Complete.

- 2. Number of factors of 9 is -----
- 3.6,350 mL = ----- L, ----- mL
- 4. The common multiple of all numbers is —
- **5.** grams = 6 kilograms , 454 grams.
- 6. The only even prime number is ———
- 7. A square of side length 5 cm, then its area = ----
- 8. Rounding the number 5,367 to the nearest Hundred is

## 3. Solve showing steps.

## El-Monofia Governorate



#### **El-Bagour Educational Directorate Mathematics Department**

1	Choose	the	correct	answer
4.0	CHOUSE	CITE	COLLECT	di istrei

2.13 + 7 = 7 + 13 is t	he propert		
• • • • • • • • • • • • • • • • • • • •	B. commutative	C. additive identity	D. distributive
<b>A.</b> 6	B. 29	<b>C.</b> 15	<b>D</b> . 51
		ength is 6 cm, then its	
<b>A.</b> 36	<b>B</b> . 180	<b>C.</b> 5	<b>D</b> . 22
5. The only even pri	ime number is ———		
<b>A.</b> 3	<b>B</b> . 5	C. 2	D. 7
6. What is the first s	step of solving 12 + 30	÷5?	
<b>A.</b> 12 + 30	<b>B.</b> 12 ÷ 5	<b>c.</b> 30 ÷ 5	<b>D.</b> 12 + 5
7. From the area mo	odel: the quotient = $-$		4 400 240 20
A. 4	<b>B.</b> 165		100 60 5
<b>C</b> . 660	<b>D</b> . 0		100 00 3

#### 2. Complete.

1. Rounding the number 648,200 to the nearest Thousand is ———	
---	--

2. The number 35 is 5 times the number -

3. The perimeter of a square whose side length is 8 cm =

**4.** 8,000 milliliters = ——— liters

5. The common factor of all numbers is -

 $6.5 \times 397 = 5 \times 300 + 5 \times ---- + 5 \times 7$ 

7. In the opposite bar model: The value of the unknown B = -

E	3
3,840	2,160

## $8.5 \times [3+6] - 15 = -$

## 3. Choose the correct answer.

1. The digit of the Hundred Thousands place in the number 9,720,354 is

A. 9

**B**. 5

C. 7

	2.8 kilograms ,7 g	rams = g	rams	
	A. 8,007	B. 7,800	<b>C.</b> 87	<b>D</b> . 8,700
	3. One of the comm	non multiples of 5 ar	nd 7 is	
	<b>A</b> . 15	B. 14	<b>C.</b> 35	<b>D</b> . 12
	4.200 × ———	-= 18,000		
	<b>A.</b> 9	<b>B</b> . 90	<b>C</b> . 900	<b>D</b> . 9000
	5. The perimeter of	farectangle whose	its length 7 m and its wi	dth 4 m = m
	<b>A.</b> 11	<b>B</b> . 22	<b>C.</b> 28	<b>D</b> . 3
	6. Which of the foll	owing represents th	ne associative property?	
	<b>A.</b> $13 \times 1 = 13$	<b>B.</b> $7 \times 0 = 0$	$C. 4 \times 5 = 5 \times 4$	<b>D.</b> $2 \times [3 \times 5] = [2 \times 3] \times 5$
	7. The remainder of	f 54 ÷ 5 is ———	_	
	<b>A.</b> 10	<b>B</b> . 5	C. 4	D. 9
4.	Answer the follow	ing questions.		
	1. Find the product		(Use one of t	he multiplication strategies
	2. A road of 874 km	length, if a train trav		road, what is the remaining
	distance of the ro			
	3. Find the G.C.F of	25 and 35		
	4. Ahmed had 92 st	ickers , he wanted to	o distribute them amon	g 4 of his friends , how
	many stickers wi	ll each of his friends	get?	
			Santa Company	
	9 El-Gha	rbia Governorate	Central Mathe	matics Supervision
1.	Choose the correct	answer.		
	1. If 600 ÷ 10 = 60 ,1			
	A. 1	B. 10	<b>C</b> . 60	<b>D</b> . 600
	2. Which of the follo	owing is a prime nun	nber?	
	A. 1	<b>B</b> . 10	<b>C.</b> 15	D. 17
	3. A rectangle its le	ngth is (L) and its wid	dth is (W) what is its per	imeter?
	A. L+W	B. L×W	C. 2×(L+W)	<b>D</b> . $(2 \times L) + W$
	4. The number 30 e	quals 5 times the nu	mber ———	
	A. 3	B. 4	C. 6	<b>D</b> . 8
	5. The digit in the H	undred Thousands p	place in the number 3,45	57,652 is —
	<b>A</b> . 7	<b>B</b> . 6	<b>C.</b> 5	D. 4

100

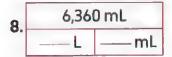
Х

- 6.8 kilometers , 45 meters = ----- meters
  - A. 845
- **B.** 855
- C. 8,000,045
- D. 8,045
- 7. If the opposite model represents the product  $5 \times 23$ 
  - , then X = ---
  - A. 7
- **B.** 115
- C. 15

D. 23

#### 2. Complete the following.

- 1. The additive identity is
- **2**. 3,728 1,596 = ----
- 3. Compute the time. 3: 25 + 6: 42 = ----
- $4.40 \div [5+3] 1 = -$
- 5. If X 20 = 30, then X = -
- 6. A rectangle of length 7 cm and width 4 cm, then its area = ----- cm<sup>2</sup>
- 7. A square of side length 6 meters, then its perimeter = \_\_\_\_\_ meters



#### 3. Choose the correct answer.

- $1.13 \times 24 = 24 \times 13$  represents the property.
- A. associative
- B. commutative
- C. Identity
- D. distributive

- 2. ——is a multiple of 5
  - A. 6
- B. 12
- C. 15
- D. 21

- $3.963 \div 3 = -$ 
  - A. 321
- **B**. 333
- **C**. 222
- D. 111

- **4.** 34,000 = ——— hundreds
  - A. 34
- **B**. 340
- C. 3,400
- D. 304
- 5. 2,357 = (rounding to the nearest Ten)
- A. 2,360
- **B.** 2.358
- **C.** 2,350
- **D.** 2,400

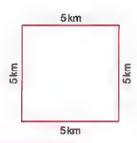
- 6.42 is times the number 6
  - A. 6
- B. 4

C. 5

- D. 7
- 7.3 minutes and 12 seconds = seconds
  - A. 300
- **B**. 312
- C. 192
- **D**. 15

### 4. Answer the following questions.

- 1. Arrange the numbers in an ascending order. 38,257,967 , 32,968,327 , 42,695 , 7,986,362
- 2. Write the factors of the number 12
- 3. Find the product of  $46 \times 3$
- 4. Find the area of the opposite figure.



## 10 El-Dakahlia Governorate



#### **Mathematics Supervision**

#### 1. Choose the correct answer.

- A. 6512
- **B.** 65,012
- C. 65,102
- **D.** 605,012

- 2.7 m , 25 cm = ----- cm
  - A. 752
- B. 7.025
- C. 725

- D. 257
- 3. The common multiple for all numbers is
  - A. 0
- **B**. 1

C. 2

**D**. 3

- 4.1 hour, 20 minutes = minutes.
  - A. 120
- B. 80
- C. 60

D. 20

- 5.57  $\div$  6 = 9 and the remainder is
  - A. 1
- B. 2

**C**. 3

D. 4

- **6. 247** = **613** 
  - A. 366
- **B**. 437
- C. 567
- **D**. 860

- 7. ——— is a factor of 63
  - A. 6
- **B**. 8

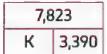
C. 9

D. 36

## 2. Complete the following.

## 4. In the opposite bar model:

The value of K =



- 5. The smallest prime number is —
- 6. G.C.F of the two numbers 8,12 is

Choose the corr	rect answer.		
1.10 kg =	—- g		
<b>A.</b> 100	<b>B.</b> 1,000	<b>C</b> . 10,000	<b>D</b> . 100,000
2. $16 - 8 \div 4 + 3$	=		
<b>A.</b> 5	B. 9	<b>C.</b> 11	<b>D.</b> 17
3. ——is	a multiple of 8		
<b>A.</b> 3	B. 4	<b>C.</b> 18	<b>D</b> . 24
<b>4.</b> 127 + 18 = 18 -	+ 127 is — pro	perty.	
A. a commut	ative	B. an associati	ve
C. an additive	e identity	D. distribution	
5.10 times 950	=		
<b>A.</b> 95	<b>B</b> . 950	<b>C</b> . 9,500	<b>D</b> . 95,000
<b>6</b> . 6,358 ≈ ——	rounded to near	rest Hundred.	
<b>A.</b> 6.360	<b>B.</b> 6.300	<b>C</b> . 6.400	<b>D</b> . 6.000
7. The divisor in	55 ÷ 11 = 5 is		
A. 55	B. 11	<b>C</b> . 5	<b>D.</b> 1

- 1. Nadia collected 16 marbles in March. By May she had 4 times as many marbles. How many marbles does Nadia have in May?
- 2. There are 72 students on the field. They want to split into 8 teams. How many students will be on each team?
- 3. Determine the perimeter and the area of the opposite rectangle.

8cm

- The perimeter:
- The area : ———

4. A car is filled with 45 liters of petrol. How many milliliters would that be?

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		~ /		

## Choose the correct answer.

1.3 × 400 = ----

**A.** 120

**B**. 12,000

C. 1,200

**D.** 12

2. The common factor of all numbers is -

**A**. 0

**B**. 1

C. 2

3. The value of digi	t 4 in 7,243,102 is	_			
<b>A</b> . 4,000	<b>B.</b> 400	<b>C</b> . 400,000	<b>D</b> . 40,0	000	
4. The perimeter of	f square whose side le	ngth is 6 cm =	— cm		
A. 24	<b>B.</b> 36	C. 12	<b>D.</b> 10		
5.4+3×2=					
<b>A.</b> 14	B. 7	<b>C.</b> 10	D. 6		
<b>6.</b> $8+0=8$ , is the	property.				
A. associative	B. commutative	C. additive identity	D. Oth	erwise	
7.5 km =	-m				
<b>A</b> . 5,000	<b>B.</b> 500	<b>C</b> . 50	<b>D</b> . 5		
2. Complete the follo	wing.				
1. The only prime ev	ven number is ———	_			
<b>2.</b> 396 ÷ 3 =					
3.45,782 ≈	— (to the nearest Tho	usand)			
4. If $3 \times m = 18$ , the	n m =				
<b>5.</b> 2,450 mL =	L,mL				
6. A rectangle of len	ngth 5 cm , width 4 cm	its area =c	m <sup>2</sup>		
7. If $A \times 13 = 13 \times 25$	, then A =				
8. By using the opp				85	50
the value of b = -				350	b
Choose the correct					
1. Which of followin	g is multiple of 4?				
<b>A.</b> 1	B. 14	C. 15	<b>D</b> . 20		
<b>2.</b> $3 \times [2 \times 7] = [3 \times 1]$	]×7				
<b>A.</b> 3	B. 2	<b>C.</b> 7	D. 6		
3. Which of following	ng is a prime number?				
A. 6	<b>B.</b> 10	C. 11	D. 9		
4. The common mu	ltiple of all numbers is				
<b>A.</b> 0	<b>B.</b> 1	<b>C</b> . 2	<b>D</b> . 3		
5. From the factors	of 18 is ————				
<b>A</b> . 5	<b>B.</b> 7	<b>C.</b> 9	<b>D.</b> 10		
6.1 day and 6 hours	=hours				
<b>A.</b> 30	B. 16	<b>C.</b> 24	<b>D.</b> 48		

9 The second 20 is Edison Alexander						_					
7. The number 20 is 5 times the number ———		nher-	num	the	imes	5	Νic	her 2	num	The	7

- A. 6
- **B**. 3

C. 4

D. 5

#### 4. Answer the following questions.

- 1. Find the G.C.F. of 12 and 18 (showing the steps)
- 2. A man bought 6 meters of cloths, if the price of one meter is 123 pounds, how much money did he pay?
- 3. Divide 125 ÷ 5
- 4. Convert the mass into the units on the bar model.

	g
35 kg	425 g



#### Suez Governorate



#### Mathematics Inspectorate

#### 1. Choose the correct answer.

- 1, 2,000 = 2 × ----
  - A. 1.000
- **B.** 100
- C. 10

D. 1

- $2.36 \div 4 + 2 = -----$ 
  - A. 6
- **B**. 9

C. 11

**D.** 22

- **3**. 3 hours = \_\_\_\_\_ minutes
  - A. 60
- **B.** 120
- **C.** 180

D. 240

- 4. When dividing  $10 \div 3 = 3$  and the remainder is
  - A. 3
- B. 2

C. 1

**D**. 0

- 5.3 and 5 are factors of the number ———
  - A. 5
- **B**. 3

**C**. 8

- **D.** 15
- 6. The number 30 is a multiple of the number
  - A. 7
- B. 4

C. 8

- **D**. 3
- 7. A rectangle of length 8 cm, and width 4 cm, then its area = ---- cm<sup>2</sup>
  - A. 4
- B. 24
- **C**. 32

**D.** 8

## 2. Complete the following.

- 1.363 ÷ 3 = ---
- 2.9 tens = ----
- 3.8 meters , 45 cm = ---- cm
- 4. 2 days = ——— hours
- 5. The place value of the digit 3 in the number 6,993,087 is —————

6.	[1 +	19)	+	25	=	1	+	[	+	251
----	------	-----	---	----	---	---	---	---	---	-----

8. If a rectangle with 4 cm wide and 7 cm long, then its perimeter = \_\_\_\_ cm

#### 3. Choose the correct answer.

1. If y × 100 = 500, then y = \_\_\_\_\_

- **A**. 5
- **B**. 10
- C. 15
- **D**. 20

2. 10 times the number 910 = -

- **A.** 910
- B. 9,100
- **C.** 91,000
- **D.** 910,000

3.  $18,642 \approx$  [to the nearest Hundred]

- **A.** 18,000
- **B.** 18,600
- C. 18,700
- **D**. 18,640

4. The additive identity is ----

- A. 0
- B. 1

**C**. 2

**D**. 10

5. If  $500 \div 50 = 10$ , then the divisor is

- A. 1
- B. 10
- **C.** 50
- D. 500

6. The smallest prime number is —

- A. 0
- B. 1

**C**. 2

**D**. 3

7. A square of side length 6 m, then its perimeter = m

- A. 36
- B. 24
- **C.** 18
- **D.** 60

## 4. Answer the following questions.

#### 1. Find:

2. Find the G.C.F. of 12 and 8

3. A square its side length is 5 m, what is the area of this square?

4. Ahmed read 286 pages of a book in the first week, 154 pages in the second week. How many pages did Ahmed read in two weeks?

## 13 Damietta Governorate



**Mathematics Supervision** 

#### 1. Choose the correct answer.

1.3 × 200 = ---

- A. 600
- **B.** 6,000
- C. 6

**D**. 60

2. The common factor of all numbers is -

- A. 0
- **B.** 1

C. 2

3. The area of rect	angle its length 4 m :	and its width is 6 m is	square meters.				
A. 24	<b>B</b> . 60	<b>C</b> . 10	<b>D</b> . 30				
4. Round 235,621 t	o the nearest Thousa	and is					
A. 235,000  5.3 kilometers = - A. 3  6.10 + 2 × 3 =	<b>B.</b> 30	<b>C.</b> 236,000 <b>C.</b> 300	<b>D.</b> 6,000 <b>D.</b> 3,000				
				<b>A.</b> 36	<b>B.</b> 16	<b>C</b> . 60	<b>D.</b> 15
				7. The value of dig	it 5 in 3,415,177 is —		
				<b>A</b> . 5,000	<b>B.</b> 500	<b>C</b> . 50,000	<b>D.</b> 5
2. Complete the foll	owing.						
1.12 × 7 =	—×12						
2.3 liters and 250	milliliters =	- milliliters					
3. If $4 \times m = 16$ , then $m =$							
4.142 ÷ 2 =							
<b>5.</b> 32,751 = 30,000	++ 700 +	- 50 + 1					
6. The even prime	number is ———	_					
7. The perimeter o	f the square of side l	ength 5 cm =	— cm				
8. If $X + 20 = 30$ , t	hen X =						
3. Choose the corre	ct answer.						
1. The prime num	ber has only ———	— factor(s)					
<b>A</b> . 0	B. 1	<b>C.</b> 2	<b>D</b> . 3				
<b>2</b> . $2 \times 5 \times 6 = 10 \times 6 = 10 \times 10^{-2}$							
<b>A</b> . 60	B. 6	<b>C</b> . 10	<b>D.</b> 30				
3.57 ÷ 1 =							
<b>A.</b> 57	<b>B.</b> 570	<b>C</b> . 58	<b>D.</b> 56				
<b>4.</b> $22 \times 50 = [20 \times 50] + [ \times 50]$							
A. 22	<b>B.</b> 2	<b>C</b> . 1,000	<b>D</b> . 100				
5. The number 20	equals 5 times the n	umber					
<b>A</b> . 100	B. 4	<b>C.</b> 5	<b>D.</b> 2				
<b>6.</b> If $600 \div 10 = 60$	then the divisor is -						
<b>A</b> . 600	<b>B</b> . 60	C. 6	<b>D.</b> 10				
7. ——— is a r							
Δ 26		C. 16	<b>D</b> . 3				

## 4. Answer the following questions. (Show your steps)

#### 1. From this part-to-whole bar model:

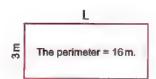
- a. Write the equation
- b. Find the value of X

5,398 X 2,164

- 2. Find the greatest common factor [G.C.F] of 9 and 12
- 3. Find the product of:  $239 \times 7$

#### 4. In the opposite rectangle:

The perimeter = 16 m, its width = 3 m, find its length.



## 14 Kafr El-Sheikh Governorate



#### **Mathematics Supervision**

#### 1. Choose the correct answer.

- 1. The value of the digit 7 in the Ten Millions place is
  - A. 70
- **B.** 7,000
- **C.** 700,000
- **D.** 70,000,000

- 2. The additive identity added to 10 equals
  - A. 0
- B. 10
- C. 11

D. 100

- 3.54,000 is \_\_\_\_\_ times more than 5,400
  - **A.** 10
- **B**. 100
- C. 1,000
- **D.** 10,000

- 4. If 267 b = 207, then b =
  - A. 160
- B. 474
- C. 600

**D**. 60

- 5.16,000 mL = \_\_\_\_L
  - A. 16
- **B.** 16,000
- **C.** 1,600
- D. 160

- **6.** If  $b \times 3 = 24$  then b = -
  - A. 8
- B. 6
- **C**. 7

D. 9

- 7.  $[5 \times 300] + [5 \times 40] + [5 \times 6] = 5 \times$ 
  - A. 346
- B. 6

C. 40

**D.** 300

## 2. Complete the following.

- 1. The greatest number formed from the digits 3,5,8 and 7 is
- 2. The number 1 milliard, 225 million and 458 thousand in standard form is

3.15 + 
$$[----+7]$$
 =  $[15 + 12] + 7$ —property.

4. 
$$21,507 \approx$$
 Round to the nearest Thousand.

**6.** If 
$$d \times 7 = 35$$
, then  $d = -$ 

. Choose the cor	rect answer.		
1. The G.C.F for 2	2 and 6 is ———		
A. 2	B. 6	<b>C.</b> 12	<b>D.</b> 3
2. The number	1 milliard , 225 milion , 45	8 in standard form is	<u> </u>
<b>A</b> . 1,225,000	<b>B</b> . 1,225,458,000	<b>C</b> . 1,225,458	<b>D.</b> 1,225,000,458
3. The remaind	ler of 29 ÷ 3 is ————		
A. 4	<b>B.</b> 3	<b>C</b> . 2	D. 1
4.8L=	— mL		
<b>A.</b> 80	<b>B</b> . 800	<b>C.</b> 8,000	<b>D</b> . 1,000
5. The number	is a factor of 12		
A. 3	<b>B</b> . 5	C. 7	<b>D.</b> 8
6. If the area of	a square is 25 cm <sup>2</sup> , then i	its side length =	cm
A. 5	<b>B.</b> 10	<b>C</b> . 100	<b>D</b> . 150
7. One of the co	mmon multiple of 6 and 7	7 is	
A. 2	B. 7	<b>C</b> . 42	<b>D.</b> 36
<ul><li>b. The area =</li><li>3. Ahmed boug</li></ul>	eter =	each book is 240 po	unds.
How much n	noney did he pay?		
4. Divide 95 L.E	. among 5 people to find t	he share of each of t	hem.
<b>15</b>	Beheira Governorate		awar Educational Zone ematics Supervision
L. Choose the cor	rect answer.		
1. The smallest	number formed from 7 d	igits is ———	
A. 1,000,000			<b>D</b> . 7
2is			
<b>A</b> . 5	<b>B.</b> 18	<b>C.</b> 8	<b>D.</b> 28
	minutes		
A. 1,000	<b>B</b> . 120	<b>C</b> . 45	<b>D</b> . 60
·	umber has only	factors.	
<b>A</b> . 0	В. 1	C. 2	<b>D</b> . 3

A rectangle of lengt	h is $5  cm$ and its $\iota$	width is 4 cm - so	its perimeter is ———

- A. 18 cm
- **B.** 12 cm
- C. 28 cm
- **D**. 20 cm

(to the nearest 1,000)

- A. 21,000
- **B**. 200,000
- **C.** 22,000
- **D.** 20,000

- 7. To convert from kilogram to gram
  - A. multiply × 10
- B. multiply × 100
- C. multiply × 1,000
- **D.** multiply  $\times$  10,000

## 2. Complete the following.

- 2. The additive indentity element is —————
- 3. The common factor of all numbers is ————

$$4.5 \times 6 + 2 =$$

$$8.3,000 \, \text{m} = ----- \, \text{km}$$

#### 3. Choose the correct answer.

- **A.** 2,450
- **B.** 245
- **C**. 0
- **D.** 45

- 2. The measuring unit of length is \_\_\_\_\_
- A. kg
- B. meter
- C. liter
- D. ton

- 3. 723 cm = ----- m + 23 cm
  - **A**. 7
- **B**. 2

**C**. 3

**D.** 72

- **A**. 40
- **B**. 8

- **C**. 60
- D. 6
- 5.  $4 \times 7 = 7 \times 4$ , represents the property.
  - A. associative
- **B**. identity
- C. commutative
- D. distributive
- 6. The smallest number formed from 2,5,0,5,1,7 is -
  - **A.** 102,557
- **B**. 12,557
- C. 755,210
- D. 752,510

- 7.125 ÷ 5 = ----
  - **A.** 15
- **B.** 52
- C. 51
- **D**. 25

## 4. Answer the following questions.

- 1. Square its side length is 6 cm, find the area.
- 2. Hassan saves 145 L.E. each month. How much money will he save in 4 months?
- 3. Find the G.C.F of 8 and 12

# 16 El-Fayoum Governorate



# West Educational Directorate Mathematics Supervision

#### 1. Choose the correct answer.

A. 10

**B**. 100

**C**. 1,000

**D**. 1

A. 5

**B**. 2

**C**. 1

**D**. 3

A. 7

**B**. 5

C. 6

**D**. 3

A. 7×4

B. 7 + 4

C. 7×7

D. 7 + 7

A. 8,558

B. 8,597

C. 8,658

D. 8,819

A. 6,721

**B**. 7,621

C. 1,267

D. 1,276

7. The divisor in 
$$36 \div 4 = 9$$
 is

A. 9

B. 5

C. 9

D. 4

# 2. Complete the following.

- 1. The common factors of all numbers is
- 2.2 hours = ---- minutes
- **3.**13 liters = ----- mL
- 4.48 × 12 = 12 × ----
- 5. The additive indentity element is
- **6.** If a square of side length 3 cm, then its area = ---- cm<sup>2</sup>
- **7.**5,000 grams = ——— kilograms
- 8.123 × 11 = ----

## 3. Choose the correct answer.

- 1. The value of digit 0 in the number 7,694,210 is
  - A. 7
- **B**. 5

**C**. 0

**D.** 3

- 2. 7 meters = \_\_\_\_ cm
- A. 6,000
- **B**. 7,000
- **C.** 700
- **D**. 7

- 3. 60 × 70 =
  - A. 2,300
- **B**. 2,400
- **C.** 420
- **D.** 4,200

4.36  $\div$  6 = 6 R -

A. 0

B. 2

C. 3

**D**. 5

5.1 day and 5 hours = --hours

A. 24

**B**. 28

**C**. 29

D. 27

6.13 × 0 = -

A. 0

B. 2

**C**. 3

**D.** 5

7. The area of a rectangle with length 9 cm and width 6 cm is-

A. 45

**B**. 48

C. 54

**D.** 30

#### 4. Answer the following questions.

1. Find G.C.F of 12 and 18

2. Marwan placed 32 bottles of juices on 8 tables equally, how many bottles of juice on each table?

 $3.52 \div 2 = -$ 

 $4.61 \times 5 = -$ 

## El-Menia Governorace



Maghagha Educational Directorate St. Mark & El-Tawfik Schools

#### Choose the correct answer.

1. The value of the digit 6 in the number 3,625,380 is —

A. 600

**B**. 6,000

**C.** 60,000

**D.** 600,000

 $2.20 \times 80 = -$ 

A. 160

**B**. 1,600

**C.** 1,000

**D.** 100

 $3.3 \times 5 + 4 - 2 = -$ 

A. 15

B. 16

C. 17

**D**. 18

 $4.27 \times 18 = 18 \times 27$  represents the property.

A. commutative B. associative

C. additive identity

D. multiply by 0

5. If  $3 \times 7 = n$ , then n = -

A. 14

**B**. 21

**C**. 28

D. 32

6.7L=---mL

A. 7

**B.** 70

C. 700

**D.** 7,000

**7.** 2,832,420 ≈ — — (to the nearest Million)

**A.** 2,000,000

**B**. 3,000,000

C. 2,800,000

**D.** 2,830,000

#### 2. Complete the following.

- 1. The prime number has only ———— factors.
- 2.37,000 = -----thousands
- 3.32 × 4 = ----
- 4.8+8+8+8=--×8
- 5.20 ÷ 4 2 = ———
- **6.** 3 kg = g
- 7.4×5×2=----
- 8. The place value of the digit 3 in the number 23,562,850 is

#### 3. Choose the correct answer.

- 1. If k × 5 = 5, then k = ---
  - **A**. 0
- **B**. 1

C. 2

**D**. 5

- 2. 14 is times the number 7
  - A. 2
- **B**. 3
- C. 4

**D**. 5

- 3. 500,000 + 30,000 + 8,000 + 200 + 30 + 6 =
  - **A.** 5333,628
- **B.** 538,236
- **C.** 538,326
- **D.** 536,823

- **4**. 678 431 =
  - A. 243
- B. 247
- **C**. 237
- **D.** 233

- **5**. 62,320 26,320
  - A. <
- B. =

C. >

D. ≥

- 6.  $[2 \times 350] \times 80 = 2 \times [350 \times ----]$ 
  - A. 2
- **B.** 350
- **C.** 80
- D. 1

- 7. 50 tens = ----
  - **A.** 50
- **B.** 500
- **C**. 5,000
- **D.** 50,000

#### 4. Find the result:

- 1. Find the perimeter of the opposite figure.
- 2. Find the factors of 10
- 3. Arrange in an ascending order:

24,567,14,567,45,657,34,657

4. Find the product of  $16 \times 3$ 

# Souhag Governorate



#### Sabry Abo Hussein Official Language School

#### 1. Choose the correct answer.

1,200,000 -	F EU UUU T	200 ± 10	<b></b> 7
1. ZUU.UUU 7	たついしいひひ 十	300 ± 10	+/=

- **A**. 250,317
- **B.** 205,317
- **C.** 253,017
- D. 250,371

- The prime number has only factors.
  - A. 0
- B. 1

**C**. 2

**D**. 3

- A. commutative B. associative
- C. additive identity
- D. distributive

20

60

3

M

100

300

- 4. The opposite area model represents 3 × 123
  - , then the value of M = -
  - A. 33

- B. 6
- D. 27

- $5.16 12 \div 4 = -$ 
  - A. 13

C. 9

B. 2

C. 1

**D**. 3

- 6. The greatest common factor of 3 and 9 is
  - A. 12

C. 27

**D**. 3

- **7.** 35 is a multiple of ———
  - A. 5
- B. 6

**C**. 8

D. 9

## 2. Complete each of the following.

- 1.350 hundreds = ----
- 2.45,641 + 23,425 = -
- $3.78,456 \approx$  [to the nearest Thousand]
- 4. From the opposite bar model
  - , the value of X = -

215		
X	183	

- 5.936 ÷ 3 = ---
- 6. is a factor for all numbers.
- **7.** 4,800 gram = ----- kg
- 8.40 is times the number 5

#### Choose the correct answer.

- 1. A rectangle of length L and width W, then its perimeter = -
  - A. L+W
- B.  $[L+W]\times 2$
- **C.**  $[L \times W] + 2$
- D. L×W×L×W

- 2. The place value of 0 in 2,045,912 is
  - A. Thousands
- B. Tens
- C. Ones
- D. Hundred Thousands

- 3.  $28 \div 9 = 3 R1$ , the divisor is
  - A. 27
- B. 9

**C**. 3

**D.** 1

- 4. 5,000 cm = ------ m
  - A. 5
- **B.** 50
- C. 500
- **D.** 5,000

- **5.** 2: 50 + 40 minutes =
  - A. 2:10
- B. 3:10
- C. 2:54
- **D.** 3:30
- - **A.** 5
- B. 8

C. 6

D. 9

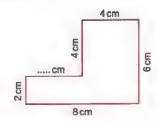
- 7. 23 × = 2,300
  - **A.** 100
- **B**. 10
- **C.** 1,000
- **D**. 1

#### 4. Answer the following questions.

- 1. A bridge of ants consists of 142 and another bridge consists of 164 ants. How many ants are there in the two bridges together?
- 2. Find the product of:  $98 \times 4$
- 3. A car filled with 45 liters of petrol. How many milliliters would that be?
- 4. In the opposite figure:

The perimeter =

The area =



# 19 Aswan Governorate

#### **Mathematics Supervision**

#### 1. Choose the correct answer.

- 1.16 + 4 = 4 + 16 represents the property.
  - A. associative
- B. commutative
- C. additive identity
- **D.** distributive

- **2**. 2 hours = minutes
  - **A.** 60
- **B.** 120
- **C.** 180

- **D.** 240
- 3. The place value of the digit 3 in 43,507,689 is
  - A. Hundreds
- B. Thousands
- C. Millions
- D. Ten Millions

- 4. The perimeter of square = side length ×
  - **A**. 0
- B. 1

**C**. 2

D. 4

- 5. If 7 × b = 14, then b = \_\_\_\_\_
  - A. 2
- **B**. 3

C. 4

**D**. 5

- **6.** 738 × 0 = \_\_\_\_
  - A. 8
- B. 1

**C**. 0

**D**. 738

A. 5,000	B. 5,800	<b>C</b> . 6,800	<b>D</b> . 6,000
		- 0,000	2. 0,000
2. Complete the fo	llowing.		
1. The area of a re	ctangle whose lengt	th is 5 cm and its width i	$s 3 cm = cm^2$
<b>2</b> . 200,000 + 30,0	000 + 5,000 + 100 + 8	30 =(in stand	lard from)
3. The smallest 7	-digit number is	_	
<b>4.</b> 235 × 4 =			
<b>5</b> .769 + 121 =			
<b>6.</b> 18 is	times the number 6		
7.5×2+3=			
8. The common f	actor of all numbers	s	
3. Choose the corre	ect answer.		
1. The divisor in the	ne operation $98 \div 7 =$	14 is	
<b>A</b> . 98	B. 7	C. 14	<b>D</b> . 0
<b>2.</b> 40 × 50 =			
<b>A.</b> 20	<b>B.</b> 200	<b>C.</b> 2,000	<b>D</b> . 20,000
3. 45 kilograms a	nd 168 grams =	grams	
<b>A.</b> 45,168	<b>B.</b> 45,086	<b>C.</b> 54,008	<b>D</b> . 54,186
4. 2,450,890	2,500,000		
A. >	B. <	C. =	D. ≥
5. What is the firs	t step of solving : 18	+ 42 ÷ 6?	
<b>A</b> . 18 + 42	B. 42 ÷ 6	C. 18 ÷ 6	<b>D.</b> 18 + 6
<b>6.</b> A rectangle its	length (L) and its wid	Ith (W) , then its perime	ter =
<b>A</b> . L+W	B. L×W	C. $2 \times [L + W]$	<b>D.</b> $(2 \times L) + W$
<b>7.</b> 18 Liters = ——	mL		
<b>A.</b> 18	<b>B.</b> 180	<b>C.</b> 1,800	<b>D</b> . 18,000
. Answer the follow	wing questions.		
1. Arrange in an a	scending order:		
2,457,287 , 98	4,610 , 5,000,000 ,	1,945,321	
The order is:	,,	,	
2. Find the greate	st common factor (G	.C.F) for 10 and 15	
3.x + 543 = 869			
Solution:			

4. Find the quotient of :  $844 \div 4 = -$ 

# 20 South Sinal Governorate



# El-Tur Educational Zone Mathematics Supervision

L.	Choose the correct	answer.	*		
	1. The number one	million and six hundre	d thousand in digits is		
	<b>A.</b> 1,600	<b>B</b> . 1,000,600	<b>C</b> . 1,600,000	<b>D</b> . 1,660,000	
	2. The value of the	digit 6 in the number 8,	,245,316 is — ———		
	A. 6	<b>B</b> . 60	<b>C</b> . 600	<b>D</b> . 6,000,000	
	<b>3</b> .8,000,000 + 5,00	0+40+3=	(to the nearest Thous	and)	
	<b>A.</b> 8,543	<b>B</b> . 805,043	<b>C.</b> 854,003	<b>D.</b> 8,005,043	
	4. The number 62,8	71 ≈(to the	nearest Thousand)		
	<b>A.</b> 62,000	<b>B</b> . 62,800	<b>C</b> . 62,871	<b>D.</b> 63,000	
	5. The property sho	own by 25 + 12 = 12 + 2	5 is the ———prope	rty.	
	A. associative	B. commutative	C. distributive	D. neutral element	
	<b>6.</b> 8 kilograms = —	grams			
	<b>A.</b> 80	<b>B</b> . 800	<b>C</b> . 8,000	<b>D.</b> 80,000	
	7. The unit which yo	ou use to measure the	length of the pencil —		
	A. meter	B. kilometer	C. centimeter	D. millimeter	
2.	Complete the follo	wing.			-
	1. The perimeter of	a square of side length	6 cm = cm		
	2.6,400 ÷ 8 =				
	3.3,000 × 12 =				
	4.5 liters =	— milliliters			
	5. The smallest eve	n prime number is —			
	6. The perimeter of	a rectangle of length 8	cm and width 4 cm is	cm	
	7.4 weeks and 2 da	ys =days			
	8. The value of A in	the equation $A \times 10 = 1$	00 is		
3.	Choose the correct	answer.			
	1.940,668	<b>940,669</b>			
	A. >	B. <	C. =	<b>D.</b> ≥	
	2. Million is the sm	allest number formed	from — digits.		
	Δ 6	B 7	C 9	D. 10	

3. ——— is a commo	n multiple of 4 and 7
-------------------	-----------------------

- A. 8
- B. 14

- C. 21
- D. 28

- A. 7
- **B**. 8

C. 9

**D.** 50

5. The area of the square whose side length is 
$$5 \text{ cm} = ---- \text{cm}^2$$

- **A**. 5
- B. 10
- **C**. 20
- **D.** 25

- A. 2
- **B**. 5

**C**. 7

D. 11

- **A.** 12
- **B.** 20
- **C**. 26
- **D.** 48

### 4. Answer the following questions.

- 1. Omar read 125 pages of a book, if the number of pages of this book is 400 pages.

  How many pages are left?
- 2. Find the greatest common factor (G.C.F) of the two numbers 40 and 50
- **3.** An ant farm in a rectangular shape with dimensions 20 cm and 8 cm. What is the area of the ant farm?
- **4.** A bridge of ants consists of 145 ants, and another bridge consists of 162 ants. How many ants in the two bridges together?



# Mathematics

By a group of supervisors

GUIDL ANSWERS

FREE PART

2



# **Answers of Revision**

#### Revision



- 1. a. 51.330
- b. 300
- c. 16
- d. Ten Thousands

c. D

- e. 38.502
- 2. a. A
- b. A
- d. B
- e. B
- **3.** 43,692 , 56,210 , 171,000 , 506,021 , 650,201
- 4. a. 3.182
- b. 68.921
- c. 27,000
- d. 49

### Revision

- 1. a. D d. A
- b. A e. A
- c. B

- 2. a. 863,507
  - b. Hundred Thousands
    - c. 9
  - d. 107,035

- e. 17
- 3. The number of cans in a week  $= 800 \times 7 = 5.600$  cans

4. The greatest number: 964,310 The smallest number: 103,469

#### Revision 3

- 1. a. 32
- b. 210
- d. 1.114
- e. 20.567
- 2. a. C
- b. C
- e B
- d. B 3. 8×1
- $3 \times 10$
- 6×9

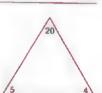
c. 38

c. D

- $7 \times 8$ 5 x 12
- 4. The number of bags = 72 ÷ 8 = 9 bags

5. • 
$$4 \times 5 = 20$$

- $5 \times 4 = 20$
- $20 \div 4 = 5$
- •20 ÷ 5 = 4





# Place Value

➤ Concept 1: Reinforcing Place Value

➤ Concept 2 : Using Place Value



## Reinforcing Place Value

# Exercise 1

1.							_				
2		Milliards	М	Millions		Thousands			C	Ones	
	Number	0	Н	т	٥	н	Т	0	Н	Т	0
Ex.	5,604,453,987	5	6	0	4	4	5	3	9	8	7
a.	8,714,326,518	9	7	1	4	3	2	6	5	1	8
b.	753,009,300	-	7	5	3	0	0	9	3	0	0
С.	7,354,621	-	-	-	7	3	5	4	6	2	1
d.	8,000,300	-	-	-	8	0	0	0	3	0	0
e.	923,508	-	-	-	-	9	2	3	5	0	8

- 2. a. 7
- b. 6
- c. 5

- d. 3
- 0 4
- £. 1

- 3. a. 400,000
- b. 700,000,000
- c. 60.000.000
- d. 10
- e. 4.000.000
- f. 0
- g. 90,000
- h. 300,000,000
- i. 0
- i. 900
- k. 3.000
- L 60.000,000
- 4. a. Millions
  - b. Hundred Thousands
  - c. Millions
  - d. Ten Millions
  - e. Hundred Thousands
  - f. 50,000

k. 7

g. 6,000,000

i. 700

- h. 60,000,000 l. 20
  - L. 10
- m. 1,346,789
- n. 10,234,567
- o. 987,543,210 p. 9,999,999

- 5. a. 75 . 421 . 392
  - b. 2,500,422,300
  - c. 701.007.700
  - d. 2.500.422
  - e. 9.009.009.009
  - f. 27.027.000
  - g. 16.000.000.016
- 6. a 56
- b. 2.800
- c. 32
- d. 3,000
- e. 550
- f. 720
- q. 8.790
- h. 800
- 1. 300
- i. 400
- k. 60.000
- L 50,000
- 7. I disagree because the value of 2. in Ones place is 2

I disagree because the value of 2 in Tens place is 20

I disagree because the value of 2 in Hundreds place is 200

- 8. a. One million
  - b. Two thousand
  - c. Seventy thousand
  - d. 10
- 9. The greatest is 98,765,321
  - The smallest is 12,356,789
  - The value of 7 in the greatest number is 700,000 and the value of 7 in the smallest number is 700

#### Answers of multiple choice questions

- 1. C
- 2. D
- 3. D

- 4. D
- 5. C
- 6. C

- 7. D
- 8. C
- 9. A

- **10.** C
- **11.** A
- **12.** C

- 13. D
- 14. B
- **15.** B

# Exercise 2

#### 1.

- a. 409
- **b.** 34,097,000
- c. 3,214,936
- d. 527,900,640
- e. 3,402,000,017
- f. 27,422
- g. 70,126,450

#### 2.

- a. 1,000,000 + 700,000 + 50,000 + 6,000 + 300
- **b.** 50,000,000 + 4,000,000 + 600,000 + 30,000 + 2,000 + 400 + 5
- c. 700,000,000 + 1,000,000 + 400,000 + 60,000 + 2,000 + 50 + 1
- **d.** 9,000,000,000 + 900,000,000
  - +80,000,000 +9,000,000
  - +700,000 +90,000 +1,000 +900 +80 +5
- e. 30,000,000 + 5,000,000 + 10,000 + 7,000 + 200 + 30
- f. 2,000,000,000 + 400,000,000
  - + 20,000,000 + 300,000 + 50,000
  - +2.000+100+3

#### 3.

- a. Three million of five hundred sixtytwo thousand of five hundred four.
- Fifty-four million > two hundred thirteen thousand > four hundred fifty.
- Five milliard , four hundred eight million , nine hundred twenty-one thousand , two.
- d. Seven hundred sixty thousand , twenty-nine.
- e. Five milliard , seven million , nine hundred three thousand , twenty.

#### 4.

- a. 3,021,509
- **b.** 1,024,000
- c. 6,221,000
- d. 8,555,666
- e. 5,000,005,005
- f. 4,025,067,059
- g. 3,003,003
- h. 5,650,016
- i. 5,023,640
- i. 742.372
- k. 803.504
- L 6,543,210
- m. 1,235,789
- n. 600
- o. 3,008,433

#### 5.

- a. 100,000 + 70,000 + 300 + 90 + 2
- **b.** 100,000 + 5,000 + 200 + 8
- c. 600,000 + 1,000 + 200 + 7
- **d.** 2,000,000 + 200,000 + 70,000 + 7,000 + 100 + 90 + 1

- **e.** 10,900,000 + 7,000,000 + 200,000 + 30,000 + 10 + 4
- f. 3,000,000,000 + 100,000,000 + 30,000,000 + 7,000,000 + 600,000 + 10,000 + 9,000 + 80 + 8

б.

a. 6,000,000,000 + 100,000,000 + 20,000,000 + 4,000,000 + 30,000 + 400 + 20

Milliards	Mi	Millions			Thousands			Ones		
0	Н	Т	0	Н	Т	0	Н	T	0	
6	1	2	4	0	3	0	4	2	0	

- **b.** 5,400,159,024 5,000,000,000 + 400,000,000 + 100,000 + 50,000 + 9,000 + 20 + 4
- c. 7,050,043,509

Milliards	Millions			Thousands			Ones		
0	Н	Т	0	Н	Т	0	Н	Т	0
7	0	5	0	0	4	3	5	0	9

7.

- a.  $(4 \times 1,000,000) + (4 \times 10,000) + (4 \times 100)$
- b. 2,005,607,927
- c. 9,053,769
- d. 9,000,000,000 + 200,000,000 + 10,000,000 + 30,000 + 1,000 + 400 + 50 + 8
  - 8. 165,640
  - 9. 987,654,321 and 986,654,321 [Answers may vary]

#### Answers of multiple choice questions

- B
   B
- 2. C
- 3. A

- 7. A
- 5. A 8. D
- 6. D 9. B

- 10. C
- 11. C
- **12.** B

13. B

# CONTRACTOR 74

## **Using Place Value**

## Exercise 3

- 1.
- 2 < b. =
- c. >
- d. >

- e. < f. >
- **q.** <
- h. <

- 1. <
- k. >
- L >

2.

i. <

- a. <
- b. > f. <
- c. = a. >
- d. < h. <

- e. <
- i. > i. <
- 3.
- a. 1.025.789
- c. 2.034.689
- **b.** 2.035 d. 98.520
- e. 743.210
- 4.
- b. 2 a. 0
  - c. 9
- d. 0
- e. 9 f. 8 i. 5 1. 0
- $\mathbf{q}, \mathbf{0}$ h. 0 k. 0 L 9
- 5. (One of the answers is)
- a. 793.820
- b. 9.933,001
- c. 22,427,400
- d. 2.000,000,000 + 400,000,000
  - +40,000,000 + 5,000,000
  - +200.000 + 30.000
  - +2,000+100+90+7

#### 6. the error

- 24,1(5)2,614 < 24,1(2)5,614
- 24, 152, 614 > 24, 125, 614
  - 7. 12.495 < 13.495

#### Answers of multiple choice questions

- 1. C
- 2. A
- 3. A

- 4. A
- 5. C
- 6. A

- 7. C
- 8. B
- 9. A 12. C

- 10. B 13. A
- 11. C 14. C

## Exercise 4

- 1.
- a. 7.534.786 > 8.092.561 > 8.650.336 9.208.111
- b. 988,423 , 1,282,756 , 3,012,427 ,3,105,338
- c. 43,000,549 , 403,000,456 ,430,000,459 , 430,549,000
  - 2.
- a. 540,312 , 504,321 , 450,321 , 342,150 , 321,405
- **b.** 6,562,942,735 , 6,562,942,375 , 6,942,735 , 6,942,537
- c. 4,273,653 , 4,237,690
  - , 4, 237, 651 , 495, 627
- 3. 3,110,099,493 , 3,010,001,034 , 3.001.323.391 - 3.000.990.992
- 4.
- a. 599,310 , 604,320 , 654,301 3654.310 3 654.311
- b. 3,405,003 , 3,450,003 , 3,450,030 3,453,000

5.

- a. 3,000,000,000 → 2,400,700,000 → 2,040,007,000 → 2,004,700,000
- **b.** 6,045,017,090 , 6,035,060,900 , 6,025,060,990 , 5,045,007,090 , 5.041,007,090

б.

- a. 461.014
  - · 6.400.042
  - [4 × 1,000,000,000] + [4 × 100,000] + [6 × 10]
  - Four milliard , six hundred thousand , four.
  - Four milliard , six hundred thousand , forty
- b. Nine million seven hundred thirty-one thousand • seventy
  - 9,000,000 + 700,000 + 40,000 + 50
  - 90,731,007
  - Seven hundred million >eighty-four
  - 900,080,500

7.

- a. 9 million
  - 5 million and 7 hundred thousand
  - 900 thousand
  - 550,223
- **b.** Four milliard six hundred thousand forty.
  - Four milliard , six hundred thousand , four

- $\bullet \ [4\times 1,000,000,000] + [4\times 100,000]$ 
  - $+[6 \times 10]$
- 6,400,042
- 461.014
- 8. The numbers will be arranged in an ascending order

3,751,624,069

<del>→</del> 3,751,624,096

→ 3,751,924,096

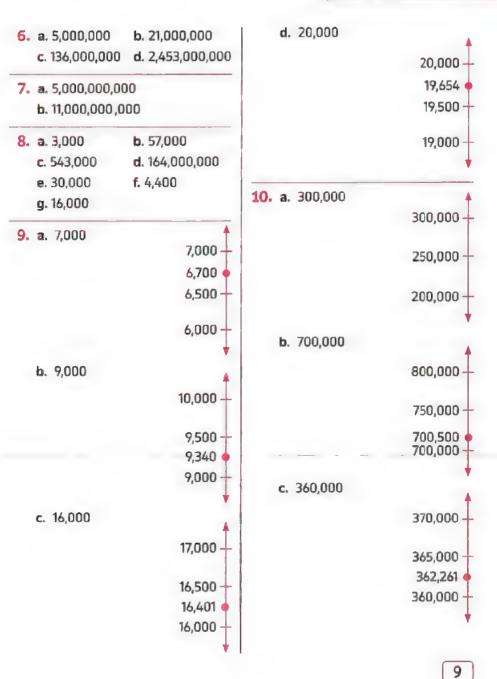
#### Answers of multiple chaice questions

- 1. D
- 2. C
- 3. B

- 4. B
- 5. C
- 6. C

# Exercise 5

- 1. a. 420
- b. 550
- c. 500
- d. 1.290
- 2. a. 900
- b. 400
- c. 4.400
- d. 2.000
- 3. a. 8,000
- b. 234,000
- c. 10.000
- d. 8,000
- 4. a. 40,000
- b. 60,000
- c. 290,000
- d. 7,435,030,000
- 5. a. 500,000
- b. 700,000
- c. 400,000
- d. 12,800,000



- **d**. 37.000
- 37,000 -36,951 -36,950 -
- 36,900 -
- 11. [The answers may be]

-		-
312,400		311,500
312,300		311,610
312,211	or	311,711
312,111		311,812
312,012		311,900
[Answers	may vary	]

- 12. The greatest number = 349,999
  - The least number = 250,000

#### Answers of multiple choice questions

- 1. C
- 2. B
- 3. A

- 4. A
- 5. A
- 6. A 9. C

- 7. A 10. D
- 8. C 11. B
- 12. B

#### Unit 1 Assessment

- 1. 1. D
- 2. B
- 3. C
- 4. C
- 5. C 6. B
- 7. A

- 2.
- 1. 7
- 2. 1,024,569
- 3. 60,000,000

- 4. Hundred Thousands
- 5. 80,124,650
- 6. 740,000
- 7. 3,000,000,000 + 500,000,000 + 4,000,000 + 800,000 + 500 + 1
- 8. Hundred Thousand
  - 3. 1. D 2. C
    - 5. B 6. D 7. B

3. A

4. C

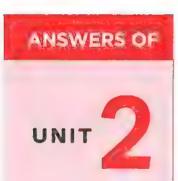
- 4.
- 1, 2,700
- 2. The greatest number is 87,654,320 ≈ 88,000,000

The smallest number is 20,345,678  $\approx$  20,000,000

- 3. a. 13,561,954 , 6,362,012 , 5,364,569 , 2,265,698
  - b. 2,265,698 •5,364,569 •6,362,012 •13,561,954
- 4. Composed: 2,805,400,693

#### Decomposed:

2,000,000,000 + 800,000,000 + 5,000,000 + 400,000 + 600 + 90 + 3



# Addition and Subtraction Strategies

► Concept 1: Using Addition and Subtraction Strategies

▶ Concept 2 : Solving Multistep Problems



# Concept 1

## Using Addition and Subtraction Strategies

#### Exercise 6

1.

a. Associative

h. Commutative

c. Associative.

d. Additive identity

e. Commutative

a. 5

2.

b. 61

c. 854

d. commutative

e. 0

3.

a. 92 + 321 + 8 = 92 + 8 + 321 [Commutative property] = (92 + 8) + 321 (Associative property) = 100 + 321 = 421

b. 1+16+4=1+[16+4] [Associative property] =1+20=21

c. 199 + 1 + 40 = [199 + 1] + 40 [Associative property] = 200 + 40 = 240

6. 5+7+8+3=5+8+7+3

{Commutative property}
= [5+8] + [7+3]

{Associative property}
= 13+10=23

4.

a. 75 + [25 + 46] = 75 + 71 = 146[75 + 46] + 25 = 121 + 25 = 146

b. [10+4]+20+17=14+20+17=51 10+[4+20]+17=10+24+17=5110+4+[20+17]=10+4+37=51 c. (820 + 78) + 12 + 80 = 898 + 12 + 80= 990 820 + (78 + 12) + 80 = 820 + 90 + 80= 990 [820 + 80] + [78 + 12] = 900 + 90 = 990

5.

a. [30 + 70] + 15 = 100 + 15 = 11530 + [70 + 15] = 30 + 85 = 115

b. 11 + [26 + 34] = 11 + 60 = 71 11 + 34 + 26 = [11 + 34] + 26 = 45 + 26 = 71

c. [220 + 88] + 80 = 308 + 80 = 388 220 + 80 + 88 = [220 + 80] + 88= 300 + 88 = 388

d. [12+28]+30+25=40+30+25=9512+[28+30]+25=12+58+25=95

6.

**a.** 15 + [18 + 12] = 15 + 30 = 45

**b.** 41 + 19 + 36 = [41 + 19] + 36= 60 + 36 = 96

c. 421 + 29 + 9 = [421 + 29] + 9= 450 + 9 = 459

d. 342+8+4+46=[342+8]+[4+46]= 350+50=400

e. 730 + 20 + 13 + 17= [730 + 20] + [13 + 17]= 750 + 30 = 780

#### 7.

24 + 35 + 105 + 66 = 24 + 66 + 105 + 35

[Commutative property]

$$= [24 + 66] + [105 + 35]$$

[Associative property]

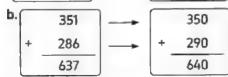
= 90 + 140 = 230

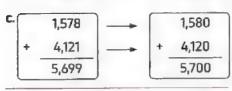
#### Answers of multiple choice questions

## Exercise 7

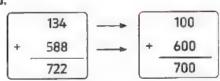
#### 1.

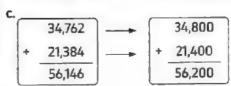
a.



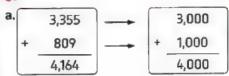


#### 2.



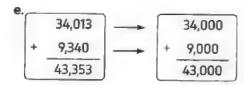


#### 3.



#### You may round in many ways. 4.

+ 8,062 12,037 + 8,000 + 8,000 12,000



- 5. You may round in many ways.
- a. 17 + 69 = 8620 + 70 = 90
- b. 523 + 387 = 910500 + 400 = 900
- c. 4,584 + 2,428 = 7,012 5,000 + 2,000 = 7,000
- d. 69,210 + 26,428 = 95,638 69,000 + 26,000 = 95,000
- e. 25,749 + 175,684 = 201,433 25,700 + 175,700 = 201,400

f. 259,111 + 9,999 = 269,110 259,000 + 10,000 = 269,000

6.

- a. 520
- b. 601
- c. 10.980

- d. 30,000
- e. 29.324
- f. 123.573

- g. 72,000
- h. 900,660

7.

- a. >
- b. =
- c. >

- d. >
- e. <
- f. >

8.

- a. The total sum = 273 + 375 = 648 ships
- b. The number of ants = 142 + 165= 307 ants
- c. Mona has = 5,235 + 2,365 = 7,600 LE.
- d. Number of tourists= 7,825 + 8,245 = 16,070 tourists
- e. Heba paid = 21,675 + 18,325 = 40,000 L.E.
- f. The total cost = 342,650 + 245,950 = 588,600 pounds
- g. The total number of visitors = 149,000 + 125,000 = 274,000 visitors
- h. The total number= 1,653,465 + 3,312,447 = 4,965,912

9.



b. 2 5 8 1 3 [5] 5 4 4

#### Answers of multiple choice questions

9

- 1. C
- 2. C 5. D
- 3. D 6. B

2

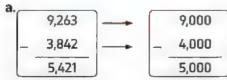
- 4. B 7. D
- 8. D
- 9. D

- 10. C
- 11. B
- 12. C

13. C

# Exercise 8

1.



b. 6,625 7.000 4,000 4,417 2,208 3,000

C. 1,816 2,000 1,066 1,000 750 1,000

d. 25.884 26,000 19,000 18,875 7.009 7,000

46,835 47,000 19.727 20,000 27.108 27,000

f. 24,305 24,000 3,000 3,071 21.000 21.234

g. 23,640 24,000 15,000 14,635 9.005 9.000

h. 538,109 538.000 321,299 321,000 216,810 217,000

2.

- a. 2,654 1,431 = 1,223
  - 3,000 1,000 = 2,000
- b. 3,458 2,064 = 1,394
  - 3,000 2,000 = 1,000
- c. 7,326 5,296 = 2,0307,000 - 5,000 = 2,000

#### Answers

- d. 70,623 = 30,611 = 40,012 71,000 = 31,000 = 40,000
- e. 238,763 18,764 = **219,999** 239,000 – 19,000 = **220,000**
- f. 853,004 45,878 = **807,126** 853,000 – 46,000 = **807,000**
- g. 542,302 281,976 = 260,326 542,000 - 282,000 = 260,000
- h. 721,010 350,891 = **370,119** 721,000 – 351,000 = 370,000
- 3. a. 2.132 b. 901 c. 1,243 d. 1,306 e. 6,606 f. 44.078 g. 204,655 h. 88,223 i. 2,549 j. 4,001
- 4. a.> b.< c.> d.> e.=
- 5.
- **a.** The remaining distance = 675 239 = 436 km
- **b.** The money remained = 8,460 3,650 = 4,810 pounds
- **c.** The number of males = 7,258 2,147 = 5,111 males
- **d.** Number of ants = 20,000 1,500 = 18,500 ants
- e. Mohamed paid = 668,500 342,650 = 325,850 pounds

- f. The difference = 517,901 112,211 = 405,690 people
- g. Mohamed paid = 7,250 + 4,750 = 12,000 L.E. The reminder = 15,000 -12,000 = 3.000 L.E.
- h. The ant have to go = 3,548 1,672= 1,876 cm
- i. The number of more ants = 3,452 1,267 = 2,185 ants
- j. The difference = 255,000 6,200 = 248,800 ants
- 6.
- a.

   8 3 9 7

   5 3 7 3

  3 0 2 4
- b. 2 3 6 4 - 1 2 2 5 1 1 3 9

#### Answers of multiple choice questions

- 1. B
- 2. C
- 3. C

- 4. B
- 5. A
- 6. C

- 7. B
- 8. C
- 9. A

- 10. A
- 11. A

## Solving Multistep Problems

### Exercise 9



1.

a. 
$$x = 34,750 + 19,051 = 53,801$$

**b.** 
$$v = 121.725 - 10.714 = 111.011$$

c. 
$$a = 78.514 - 29.125 = 49.389$$

d. 
$$m = 41.621 + 52.321 = 93.942$$

2.

- a. Bar model:
- 14.000 6.000

Solution:

$$n = 14,000 - 6,000 = 8,000$$

b. Bar model: Solution:

m				
35,462	2,741			

- m = 2.741 + 35.462 = 38.203
- c. Bar model: Solution:

h 53.500 75,200

- b = 75.200 + 53.500 = 128,700
- d. Bar model: Solution:

7,549	
У	4,641

- v = 7.549 4.641 = 2.908
- e. Barmodel: Solution:

935,075 725,625

- c = 935,075 725,625 = 209,450
- f. Bar model: Solution:

13,280 d 5,420

$$d = 13,280 - 5,420 = 7,860$$

g. Bar model:

Solution:

7,000 5.000

- a = 7.000 5.000 = 2.000
- h. Barmodel:

Solution:

810.775 205,925

- f = 810.775 205.925 = 604.850
- a. 11.091 3.
- b. 4.000 c. 3.310

- d. 3.107
- e. 175
- f. 4.250
- a. 2.000
- h. 4.500 I. 210

- i. 84
- k. 3,625,269

4.

a. Equation: 1,234 + i

2,340 1.234

Solution:

l = 2.340 - 1.234 = 1.106 girls

b. Equation: 2,500 + n

= 12.000

12,000 2,500

**Solution**: n = 12,000 - 2,500

= 9,500 species

c. Equation: 2,164 + x = 5,328

Solution:

5,328 2.164

x = 5.328 - 2.164

= 3.164 males

#### Answers

**d.** Equation: 700 + y = 1.200

1.200 **Solution**: v = 1.200 - 700700 = 500 ants

5. Solution: l = 4R

#### Answers of multiple choice questions

- 1. D
- 2. B
- 3. A

- 4. D
- 5. D
- 6. B

- 7. B
- 8. D
- 9. C

10. C

# Exercise 10

1.

a. Mohamed paid = 6.250 + 3.750= 10,000 L.E.

The left = 16.000 - 10.000= 6.000 LE

- b. You read in two weeks =423+346=769 pages The left = 900 - 769 = 131 pages
- c. Bassem and Mina collected = 198 + 357 = 555 stamps The number of more stamps Sara collected = 743 - 555 = 188 stamps
- d. The number of toys in first , second and third months
  - = 6.580 + 7.214 + 5.975 = 19.769toys

e. The number of ants in the two colonies = 27.385 + 52.890= 80.275 ants

The number of more ants to join

= 173,500 - 80,275 = 93,225 ants

f. The number of visitors in January 3 February and March

= 59,000 + 27,525 + 32,975

= 119.500 visitors

The needed visitors to reach the

count = 150,000 - 119,500

= 30.500 visitors

g. The population of Matrouh and South Sinai = 429,999 + 108,951

= 538,950 people

The more population in Matrouh and South Sinal than New Valley

- = 538.950 256.088
- = 282,862 people
- h. The number of ants on Monday

= 1,725 + 22,750 + 6,075

= 30,550 ants in the large colony

The number of ants joined the colony since Monday

= 50.750 - 30.550 = 20.200 ants

- i. The total of calories
  - = 340 + 190 + 85 + 255
  - = 870 calories

So, Ahmed can eat today

2.000 - 870 = 1.130 calories

2.

- a. The number of red shirts
  - = 18.421 + 43.218 + 14.132
  - = 75.771 shirts

The number of green shirts

- = 15,436 + 33,142 + 5,347
- = 53.925 shirts

The number of more red shirts than areen shirts = 75.771 - 53.925

= 21,846 shirts

b. The number of small shirts

= 15,436 + 18,421 = 33,857 shirts

The number of large shirts

= 5.347 + 14.132 = 19.479 shirts

The number of more small shirts than large shirts = 33,857 – 19,479

= 14.378 shirts

	The second second		and the second second
- Umi	AND ADD TO SE	E-E-E-E-	ment

- 1. 1 B
- 2. A
- 3. A

- 4. B
- 5. D
- 6. B

- 7. C
- 2. 1. 123,573
- 2. 0
- 3.15,595

- 4.5,7
- 5 675
- 6. 63

- 7. 6,650
- 8. 3,193
- 3. 1. A
- 2. B
- 3. C

- 4. A
- 5. C
- 6. B

**7.** D

4.

- 1. a. 77,777
- b. 489
- 2. Equation: 5 + 6 + m = 18

11 + m = 18

Solution: m = 18 - 11 = 7 pieces

3. Mohamed paid = 7,250 + 4,750= 12.000 L.E.

The left = 15,000 - 12,000= 3.000 L.E.

4. The number of ants = 692 + 165

= 857 ants

ANSWERS OF

UNIT 3

# Concepts of Measurement

▶ Concept 1 : Metric Measurement

▶ Concept 2 : Measuring Time



# (वें गां। (वें में))

#### Metric Measurement

# Exercise 11

- 1. Centimeter 1.
- 2. Kilometer
- 3 Kilometer
- 4 Millimeter
- 5 Kilometer
- 2.
  - b. 12.000 c. 160 a. 1.000
  - d. 120
- e. 100
- f. 500

- a. 700
- h. 40
- 1. 7

- i. 900
- k. 7
- 1. 53 o. 3
- m. 845
- n. 348
- p. 9,250 q. 27,055 r. 4,23
- 5. 89 .7
- £ 2.000
- 3. a. 2 m 30 cm b. 4 m 78 cm

  - c. 8 dm , 5 cm d. 3,040 m

  - e. 591 cm
- f. 75 mm

- 4.
- a. 8 mm 38 m 38,000 cm 38 km
- **b.** The distance  $= 7 \times 3 = 21 \text{ km}$  $= 21.000 \, \mathrm{m}$
- c. 1.8 m = 800 cm
  - 2. It traveled =  $10 \times 1 = 10 \text{ km}$

It traveled  $= 10.000 \, \text{m}$ 

It traveled = 1,000,000 cm

d. The length of a line =  $100,000 \times 1$ 

 $= 100,000 \, cm$ 

 $= 1.000 \, \text{m}$ 

e. The length of a line =  $100.000 \times 1$ 

= 100.000 cm

 $= 1.000 \, \text{m}$ 

 $=1 \,\mathrm{km}$ 

#### Answers of multiple choice questions

- 1. (
- 2. C 5. B
- 3. C 6. B

- 4. A 7. C
- 8. C
- Q. A

- 10. C
- 11. B
- 12. B

13. D

# Exercise 12

- 1. a. 3.000 d. 5.000
- b. 4.000 e. 7
- c. 8.000 f. 19

- g. 5
- h. 30
- i. 5.321

- i. 6.454
- k. 6 450
- L 2,456
- m. 35,086 n. 4,535
  - o. 14
- p. 7,324
- 2. a. 4 , 590
- b. 8 , 400
- c. 7.414
- d. 2.030
- 3. a. >
- b. <
- c. < f. <

- d. =
- p. >
- 4. 4.769 a 36 kg 368.000 g 3980 kg 2 tons
- 5. 3,493 grams
  - = 3 kilograms and 493 grams
- 6. The weight
  - = 14 kilograms and 89 grams
  - = 14.000 + 89 = 14.089grams

- 7. a. Bowling ball , Basketball ,
  Tennis ball , Table tennis ball
  - b. The total mass
    - = [616 + 616] + [145 + 145]
    - = 1,232 + 290 = 1,522 grams
    - $=1 \text{kg} \rightarrow 522 \text{ g}$
    - So , it is less than 2 kg

#### Answers of multiple choice questions

- 1. D
- 2. B
- 3. D

- 4. C
- 5. D
- 6. C

- 7. D
- 8. A
- 9. C

- 10. A
- 11. A 1
- 12. B

13. C

# Exercise 13

- 1. a. 2.500
- b. 6.000
- c. 3,000
- d. 9,000
- e. 50,000
- f. 2
- q. 6
- h. 10
- i. 73,000
- i. 560
- k. 8.500
- L. 19.325
- m 84,084
- n. 5 , 700
- o. 5,328
- p. 2 , 222
- q. 61,254
- r. 7 , 5
- s. 541 , 541
- t. 4,234
- u. 7,400
- v. 15
- 2. a. 6 , 360
- b. 9 , 425
- c. 8,910
- d. 2,250

- **3.** a. 5,000
- b. 8,035
- **c.** 6,000
- d. 4
- e. 11,495 g. 25,294
- f. 4,700 h. 10.100
- 1. 445
- i. 10
- 4. 4.000 mL , 5L , 6L , 13.000 mL
- 5.
- a. What Mona drunk = 4 L = 4,000 mL
- b. 45 L = 45,000 mL
- c. The left = 3 L-1 L , 500 mL
  - = 3,000 mL = 1,500 mL = 1,500 mL
- d. She needs = 10 L 5 L , 245 mL
  - $= 10,000 \, \text{mL} 5,245 \, \text{mL}$
  - $= 4.755 \, \text{mL}$
- e. The car used
  - = 20 L + 500 mL 15 L + 250 mL
  - = [20 L 15 L], [500 mL 250 mL]
  - = 5 L , 250 mL

#### Answers of multiple choice questions

- 1. B
- 2. D
- 3. A

- 4. D
- 5. A
- 6. D

- **7.** C
- 8. A
- 9. D

- **10.** D
- 11. D
- **12.** B

# व्यासम्बद्धाः 🙎

## **Measuring Time**

# Exercise 14

- a. 4:15
- b. 1:50
- c. 7:45

- a. 7:00
- It's 7 a'clock
- b. 8:10
- It's 10 past 8
- c. 4:40
- It's 20 to 5

3.

Minute	Second	
1	60	
2	120	
3	180	
4	240	
5	300	
6	360	
7	420	
8	480	
9	540	
10	600	

Hour	Minute
nour	Millute
1	60
2	120
3	180
4	240
5	300
6	360
7	420
8	480
9	540
10	600

Day	Hour	
1	24	
2	48	
3	72	
4	96	
5	120	
6	144	
7	168	
8	192	
9	216	
10	240	

Week	Day
1	7
2	14
3	21
4	28
5	35
6	42
7	49
8	56
9	63
10	70

4.	<b>a.</b> 35	<b>b.</b> 120	c. 240
	d. 128	<b>e.</b> 300	f. 180
	g. 120	h. 3,4	1. 2,10
	j. 2 , 2		
-	/20	L 10	. 17

_			
5.	a. 630	<b>b.</b> 10	c. 17
	d. 29	e. 116	f. 60
	g. 630	h. 130	i. 260
	i. 375		

6.	a. 4:10	b. 4:51	c. 3:20
	d. 4:16	e. 6:05	f. 9:02
	g. 2:25	h. 4:18	i. 5:55

7.

#### a. Elapsed time

	Hours		Minutes
	9	:	50
_	1	:	20
	8	:	30

#### b. Elapsed time

	Hours		Minutes
	10	4	77.77
-	6	:	40
	3	:	37

#### c. Elapsed time

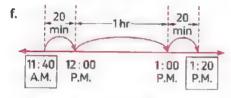
	Hours		Minutes
	78	:	<sup>60</sup> 80
-	4	:	27
-	3	:	33

#### d. Elapsed time

	Hours		Minutes
	9	:	43
-	6	:	43
	3	:	00

#### e. Elapsed time

	Hours		Minutes
	12	0	•°D9
_	6	:	15
	5	:	45



Elapsed time = 1 hr + 20 min + 20 min= 1 hr + 40 min

8.

- **a.** Number of minutes =  $(2 \times 60) + 15$ = 120 + 15
- **b.** Number of hours =  $19 \times 3$ = 19 + 19 + 19= 57 hours
- c. Total = 3 + 4 + 5 = 12 hours =  $12 \times 60 = 720$  minutes

d. 240 minutes = 60 min + 60 min
 + 60 min + 60 min
 = 4 hours
 Number of hours is 4 hours.

9.

a.

	Hours		Minutes
	7	:	00
+	2	;	40
	9	:	40

The party got over at 9:40 in the evening.

b.

	Hours		Minutes
	8	:	35
+	_1	:	30
	9	:	.65
	10	:	05 A.M.

She finished at 10:05 A.M.

C.

= 135 minutes

	Hours		Minutes
	5	:	10
+	0		57
	5	:	.67
	6	:	07 P.M.

The train arrived at 6:07 P.M.

d.

	Hours		Minutes
	9 10	*	*505
-	7	-	50
	2	:	15

The elapsed time of the game is 2 hours and 15 minutes

	Hours		Minutes
	3	:	30
+	0	:	45
+	0	1	25
	3	4	190
	4	1	40 P.M.

He finished at 4:40 P.M.

f. [1]

	Hours		Minutes
	1	:	22
+	2	:	12
+	1	:	57
	K	:	91
	5	1	31

No , the girls don't have enough time.

[2] The total time of the two shortest movies is

	Hours		Minutes
	1	4 4	22
+	1	6 4	57
	2	8	79
_	3	:	19

	Hours		Minutes	5
	5		30	P.M.
+	3	:	19	
	8	*	49	P.M.

The movies will end at 8:49 P.M.

g.		Hours		Minutes
		7	:	42
	-	6	:	30
		1	:	12

The elapsed time of the ant looking for food is 1:12

#### Answers of multiple choice questions

1. C 2. C 3. C 5. A 4. D

6. D

7. D

8. C

9. C

10. A 11. C 12. D

# Exercise 15

#### First: Problems involving length

1.

The tall will be = 44 cm, 5 mm + 35 cm= 79 cm, 5 mm

2.

The left

 $= 63 \,\mathrm{m} - [56 \,\mathrm{m} + 21 \,\mathrm{cm}]$ 

 $= [62 \,\mathrm{m} \, , \, 100 \,\mathrm{cm}] - [56 \,\mathrm{m} \, , \, 21 \,\mathrm{cm}]$ 

=6m = 79 cm

3.

The two ant lines together

= 30 cm + 500 mm

= 30 cm + 50 cm = 80 cm

4.

Ant from colony A walked 2 km

Ant from colony B walked 3,000 m

 $=3 \, \text{km}$ 

So , the farthest is the ant from colony B

The difference = 3 - 2 = 1 km

5.

His tall was = [1 m + 6 cm] - 10 cm= 106 - 10 = 96 cm

Second: Problems involving mass

6.

Adam bought = 5 kg + 200 g= 5,000 + 200= 5,200 g 7.

The total mass

= [8 kg + 10 kg] + [500 g + 225 g + 275 g]

= 18 kg + 1,000 g = 18 kg + 1 kg = 19 kg

8.

The consumed = 25 + 37 = 62 gThe left = 950 - 62 = 888 g

9.

The onions weight

= [2 kg + 920 g] - [1.075 g]

 $= 2,920 - 1,075 = 1,845 \,\mathrm{g}$ 

The weight of potatoes and onlons

= 2,920 + 1,845 = 4,765 g

10.

Ali's cat weighs = 7 kg , 450 g

Ali's dog weighs = 17 kg, 120 g

His two pets weigh in all now

= [7 kg , 450 g] + [17 kg , 120 g]

= (24 kg + 570 g)

Third: Problems involving capacity

11.

 $20,000 \, \text{mL} = 20 \, \text{L}$ 

The tank needs = 100 - 20 = 80 L

12.

The milk he sold in the 5 days

= (46 L + 200 mL) + (53 L + 195 mL)

= 99 L , 395 mL

13.

Mr. Emad bought =  $4 \times 2 = 8 L$ = 8.000 mL

#### The students drunk

- $= 8.000 \, \text{mL} [2 \, \text{L} \, > 829 \, \text{mL}]$
- $= 8,000 2,829 = 5,171 \,\mathrm{mL}$

#### Fourth: Problems involving time

#### 14.

#### The bus will reach at

	hr.	:	min.
	4	:	30 P.M.
+	1	:	25
	5	:	55 P.M.

#### 15.

#### It will end at

	hr.	*	min.
	6	:	30 P.M.
+	3	*	15
	9	:	45 P.M.

#### 16.

#### A pharaoh ant takes = 45 days

A carpenter ant takes

- $= 12 \text{ weeks} = 12 \times 7 = 7 \times [10 + 2]$
- $= (7 \times 10) + (7 \times 2) = 70 + 14 = 84$ days

So  $\mathfrak{sa}$  carpenter ant takes longer to grow.

The difference = 84 - 45 = 39 days

#### 17.

A worker ant takes = 250 min.

A queen ant takes

 $= 9 \text{ hours} = 9 \times 60 = 540 \text{ min.}$ 

So > a queen ant sleeps longer

The difference = 540 - 250 = 290 min.

#### 18. The total she gave

 $= [12 \,\mathrm{m} + 53 \,\mathrm{cm}] + [18 \,\mathrm{m} + 35 \,\mathrm{cm}]$ 

+ [9 m + 7 cm] = 39 m + 95 cm

The left = 40 m - (39 m + 95 cm)= 5 cm

#### Answers of multiple choice questions

- 1. D 2. C 3. D 4. B
- 5. D 6. A 7. D

## Exercise 16

#### First: Problems involving length

- 1. Ants walk in 5 days = 5,000 × 5 = 25,000 meters
- 2. The distance = 750 × 5 = 3.750 meters
- 3. Each piece length = 12 ÷ 3 = 4 m = 4 × 100 = 400 cm
- 4. 5,000 m = 5 km
  Sara walked in all = 5 × 9 = 45 km

#### Second: Problems involving mass

- 5. The mass of 4 boxes =  $320 \times 4 = 1,280 \text{ kg}$
- 6. What he gains in 5 weeks  $= 500 \times 5 = 2,500 \text{ g}$

His mass at the end

= 100 kg + 2,500 g

= 100,000 g + 2,500 g = 102,500 g

= 102 kg + 500 g

The weight carried by each ant

 $= 1 \times 50 = 50 \,\mathrm{g}$ 

## The weight carried in all $= 50 \times 10 = 500 \text{ g}$

#### Third: Problems involving capacity

- A water purifier cleans each day
   10 L , 50 L
   10,000 mL + 50 mL = 10,050 mL
   Water will be cleaned in 10 days
   10,050 × 10 = 100,500 mL
- 9. He needs per day = 500 × 4 = 2,000 mL = 2 L

He needs for 1 week =  $2 \times 7 = 141$ 

- 10. Each person has = 32 ÷ 8 = 4 L

  Fourth: Problems involving time
- **11.** He slept =  $8 \times 5 = 40$  hours

= 100 L > 500 mL

- **12.** An ant work in 3 days = 19 × 3 = 57 hours
- 13. Half an hour = 30 min
  The total = 30 × 5 = 150 min

#### 14.

Day	Climbing distance	Reversing distance	Total distance traveled
1	4 m	2 m	2 m
2	4 m	2 m	4m
3	4 m	2 m	6m
4	4 m	2 m	8 m
5	4 m	2 m	10 m
6	4 m	2 m	12 m
7	4 m	2 m	14 m
8	4 m	2 m	16 m
9	4 m	0	20 m

\* It takes 9 days
[get out of the well]

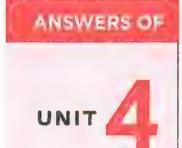
#### Answers of multiple choice questions

1. C 2. B 3. B 4. B 5. D 6. C 7. D 8. C

#### Unit 3 Assessment

- 1. 1. C 2. B 3. C 4. B 5. A 6. B 7. B 2. 1.35 2. 9 3. 15,423 4.35,076 5. 31,310 6. 845 7.9:00 8.5:09
  - 3. 1.B 2.B 3.A 4.A 5.C 6.D 7.A
- 1. The total mass =  $300 \times 6 = 1,800 \text{ g}$ =  $1 \text{ kg} \cdot 800 \text{ g}$
- 2. The total mass = [3 kg ,400 g] + [5 kg ,217 g] = 8 kg ,617 g

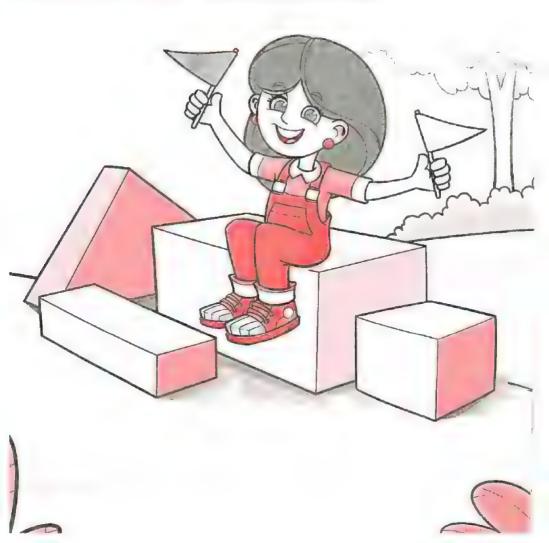
- 3. Height of each book = 8 cm ,5 mm = 85 mm The total height = 85 × 10 = 850 mm = 85 cm
- 4. a. 9,450 b. 10,100 c. 7,50 d. 7,500



## Area and Perimeter

▶ Concept 1:

Explore Area and Perimeter



## Gorrespi. 1

### **Explore Area and Perimeter**

## Exercise 17

1. a. 
$$P = 5 + 2 + 5 + 2 = 14 \text{ m}$$

**b.** 
$$P = 12 + 9 + 12 + 9 = 42 \text{ cm}$$

c. 
$$P = 17 + 4 + 17 + 4 = 42 \text{ cm}$$

2. a. 
$$P = (2 \times 10) + (2 \times 7) = 20 + 14$$
  
= 34 m

**b.** 
$$P = [2 \times 15] + [2 \times 9] = 30 + 18$$

 $=48 \, \mathrm{mm}$ 

c. 
$$P = (2 \times 25) + (2 \times 12) = 50 + 24$$
  
= 74 km

3. a. 
$$P = 2 \times (24 + 6) = 2 \times 30 = 60 \text{ m}$$

**b.** 
$$P = 2 \times [17 + 13] = 2 \times 30$$

 $= 60 \, \text{mm}$ 

= 40 + 24 = 64 cm

c. 
$$P = 2 \times (45 + 20) = 2 \times 65$$

$$= 2 \times (60 + 5)$$

$$= [2 \times 60] + [2 \times 5]$$

$$= 120 + 10 = 130 \,\mathrm{dm}$$

4. a. 
$$P = 4 \times 8 = 32 \text{ km}$$

**b.** 
$$P = 4 \times 4 = 16 \text{ m}$$

c. 
$$P = 4 \times 16 = 4 \times [10 + 6]$$
  
=  $4 \times 10 + 4 \times 6$ 

5.

a. First formula:

$$P = (2 \times 3) + (2 \times 2) = 6 + 4 = 10 \text{ m}$$

Second formula:

$$P = 2 \times [3 + 2] = 2 \times 5 = 10 \text{ m}$$

b. First formula:  $P = 4 \times 9 = 36$  cm

Second formula:

$$P = 9 + 9 + 9 + 9 = 18 + 18 = 36 \text{ cm}$$

c. First formula:

$$P = 4 \times 27 = 4 \times [20 + 7]$$

$$= (4 \times 20) + (4 \times 7) = 80 + 28 = 108 \text{ cm}$$

Second formula:

$$P = 27 + 27 + 27 + 27 = 54 + 54$$

= 108 cm

d. First formula:

$$P = (2 \times 30) + (2 \times 50) = 60 + 100$$

 $= 160 \, \text{mm}$ 

Second formula:

$$P = 50 + 30 + 50 + 30 = 80 + 80$$

 $= 160 \, \text{mm}$ 

e. First formula:

$$P = 67 + 21 + 67 + 21 = 88 + 88 = 176 \text{ m}$$

Second formula:

$$P = 2 \times [67 + 21] = 2 \times 88$$

$$= 2 \times [80 + 8]$$

$$= [2 \times 80] + [2 \times 8]$$

$$= 160 + 16 = 176 \text{ m}$$

f. First formula:

$$P = 33 + 33 + 33 + 33 = 66 + 66$$

 $= 132 \, \text{mm}$ 

#### Second formula:

$$P = 4 \times 33 = 4 \times [30 + 3]$$
  
=  $[4 \times 30] + [4 \times 3]$   
=  $120 + 12 = 132 \text{ mm}$ 

7. a. 
$$P = 4 \times 4 = 16 \text{ cm}$$
  
b.  $P = 2 \times (2+5) = 2 \times 7 = 14 \text{ cm}$ 

8. 
$$P = 2 \times (6 + 4) = 2 \times 10 = 20 \text{ m}$$

9.

The perimeter =  $[2 \times 7] + [2 \times 4] = 14 + 8$ = 22 meters.

#### 10.

The perimeter = 
$$2 \times [8 + 6] = 2 \times 14$$
  
=  $2 \times [10 + 4]$   
=  $[2 \times 10] + [2 \times 4]$   
=  $20 + 8 = 28 \text{ cm}$ 

#### 11.

The perimeter = 
$$2 \times [16 + 14] = 2 \times 30$$
  
= 60 cm

#### 12.

The length of the border of Sarah's cake =  $4 \times 30 = 120$  cm

#### 13.

The perimeter of the frame =  $4 \times 63 = 4 \times (60 + 3) = (4 \times 60) + (4 \times 3)$ = 240 + 12 = 252 mm

#### 14.

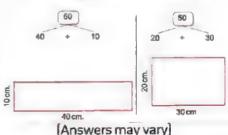
The length of the rope =  $2 \times [105 + 68] = 2 \times 173$ =  $2 \times [100 + 70 + 3]$ =  $2 \times 100 + 2 \times 70 + 2 \times 3$ 

$$= 200 + 140 + 6 = 346 \text{ m}$$

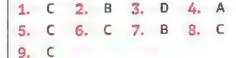
#### 15.



- 1. Half of perimeter  $= 1 + w = 100 \div 2 = 50 \text{ cm}$
- 2. The rectangle dimensions can be



#### Answers of multiple choice questions



## Exercise 18

1. **a.** 
$$A = 1 \times w = 9 \times 3 = 27 \text{ cm}^2$$
  
**b.**  $A = 5 \times 5 = 6 \times 6 = 36 \text{ cm}^2$ 

- c.  $A = s \times s = 5 \times 5 = 25 \text{ km}^2$
- d.  $A = 1 \times w = 18 \times 10 = 180 \text{ m}^2$
- **e.**  $A = 1 \times w = 8 \times 6 = 48 \text{ mm}^2$
- f.  $A = 1 \times w = 12 \times 4 = 48 \text{ cm}^2$
- 2. a. Area =  $4 \times 6 = 24 \text{ cm}^2$

Perimeter = 
$$2 \times (4 + 6)$$

$$= 2 \times 10 = 10 + 10$$

 $= 20 \, \mathrm{cm}$ 

b. Area =  $5 \times 3 = 15 \text{ cm}^2$ 

Perimeter = 
$$2 \times [5 + 3]$$

$$= 2 \times 8 = 16 \text{ cm}$$

- c. Area =  $9 \times 9 = 81 \text{ m}^2$ 
  - Perimeter =  $4 \times 9 = 36 \,\mathrm{m}$
- 3. a. side length sitself
  - **b.** 16 m<sup>2</sup>
- c. 36
- d. 64
- e. 49
- f. 81
- **g**. 24 cm<sup>2</sup>
- h. 24
- i. 15 cm<sup>2</sup>
- i. 80 mm<sup>2</sup>
- 4.  $A = 5 \times 10 = 50 \text{ cm}^2$
- 5.  $A = 25 \times 10 = 250 \text{ m}^2$
- 6. The area =  $9 \times 5 = 45 \text{ cm}^2$
- 7.  $A = 4 \times 4 = 16$  square meters
- 8.  $A = 5 \times 5 = 25 \text{ m}^2$
- 9.

The area of the glass =  $8 \times 8 = 64 \text{ cm}^2$ 

10.

The area =  $3 \times 3 = 9 \text{ m}^2$ 

11.

The area of the garden =  $7 \times 5 = 35 \text{ m}^2$ 

12.

The area of the glass =  $8 \times 6 = 48 \text{ m}^2$ 

13.

The area of the ant farm =  $20 \times 8$ =  $160 \text{ cm}^2$ 

14.

The area of the ground =  $4 \times 4 = 16 \text{ m}^2$ 

15.

Area of rectangle =  $7 \times 5 = 35 \text{ cm}^2$ 

, area of square  $= 6 \times 6 = 36 \text{ cm}^2$ 

So, the greater in area is the square.

16.

First:



 $A = 9 \times 4 = 36$  square carpet tiles

$$P = 2 \times [9 + 4] = 2 \times 13$$

 $= 2 \times [10 + 3] = [2 \times 10] + [2 \times 3]$ 

= 20 + 6 = 26 units

(Answers may vary)

#### Second:

 $A = 6 \times 6 = 36$  square carpet tiles  $P = 4 \times 6 = 24 \text{ units}$ [Answers may vary]

### 17. Length = 12 cm or 8 cm Explanation:

Area	Length	Width	Perimeter
24 = 24 × 1	24	1	$(24 + 1) \times 2 = 25 \times 2 = 50 > 30$
24 = 12 × 2	12	2	$(12+2) \times 2 = 14 \times 2 = 28$
24=8×3	8	3	$[8+3] \times 2 = 11 \times 2 = 22$
24 = 6 × 4	6	4	[6+4] × 2 = 10 × 2 = 20

#### Answers of multiple choice questions

- 1. C
- 2. A
- 3. C

- 4. A 7. A
- 5. D 8. A
- 6. D 9. B

10. D

## Exercise 19

- a.  $x = 15 \div 5 = 3 \text{ cm}$ 1.
  - **b.**  $x = 50 \div 10 = 5$  units
  - c.  $x = 99 \div 11 = 9 \text{ m}$
- 2. a.  $x = [24 \div 2] 8$ = 12 - 8 = 4 cm
  - **b.**  $x = [26 \div 2] 5$ 
    - = 13 5 = 8 units

c. 
$$x = [44 \div 2] - 15$$
  
= 22 - 15 = 7 m

- a. y = 4 m because:  $4 \times 4 = 16$ 3.
  - b. v = 7 cm because:  $7 \times 7 = 49$
  - c. v = 10 cm because:  $10 \times 10 = 100$
- a.  $v = 20 \div 4 = 5 \text{ cm}$ 4.
  - **b.**  $v = 12 \div 4 = 3 \text{ km}$
  - c.  $v = 44 \div 4 = 11 \text{ m}$
- a. 5 5.
- h. 6
- c. 7

- d. 10 cm
- p 9 6.5
- h. 16 7 km
- 1. 9

- i. 5
- k. 7 km
- L 28 m
- n. 63 m<sup>2</sup> m. 9 cm
- a. 50 cm<sup>2</sup> 6.
- 30 cm
- h. 2 m
- 14 m
- c. 8 km
- 34 km
- d. 5 dm

- $30 \, dm^2$
- e. 7 mm
- 14 mm<sup>2</sup>
- 7. a. 81 m<sup>2</sup>
- 36 m
- b. 8 cm
- 32 cm
- c. 6 mm
- $36 \, \text{mm}^2$

#### 8.

$$1 = A \div w = 28 \div 4 = 7 \text{ cm}$$

$$P = 2 \times (L + w) = 2 \times (7 + 4) = 2 \times 11$$

 $= 22 \, cm$ 

$$l = w = 7 \text{ cm}$$
  
because  $7 \times 7$ 

= 49



10.

$$l = [P \div 2] - w = [26 \div 2] - 6 = 13 - 6$$
  
= 7 m

$$A = 1 \times w = 7 \times 6 = 42 \text{ m}^2$$

11.

$$s = P \div 4 = 40 \div 4 = 10 \text{ m}$$

$$A = s \times s = 10 \times 10 = 100 \text{ m}^2$$

12.

$$A = 1 \times w = 8 \times 6 = 48 \text{ m}^2$$

$$P = 2 \times (l + w) = 2 \times (8 + 6) = 2 \times 14$$
  
= 14 + 14 = 28 m

13.

Width of the rectangle =  $A \div l = 36 \div 9$ 

= 4 cm

Side length of the square = 6 cm

[because  $6 \times 6 = 36$ ]

 $P[rectangle] = 2 \times [l + w]$ 

$$= 2 \times [9 + 4] = 2 \times 13$$

= 13 + 13 = 26 cm

 $P[square] = s \times 4 = 6 \times 4 = 24 cm$ 

So , the rectangle has the greater perimeter.

Answers of multiple choice questions

- 1. B
- 2. B
- 3. B

- 4. C
- 5. A
- 6. D

- 7. C
- A. A
- 9, C

- 10. D
- 11. D

Exercise 20

- a.  $A = 19 \text{ m}^2$ 1.
- $P = 22 \, \text{m}$
- b.  $A = 276 \text{ m}^2$
- $P = 84 \, \text{m}$
- c.  $A = 33 \text{ cm}^2$
- P = 28 cm
- d.  $A = 41 \text{ cm}^2$
- P = 28 cm
- $e. A = 46 m^2$
- P = 30 m
- $f. A = 40 \text{ cm}^2$
- P = 36 cm
- $2. A = 24 \text{ cm}^2$
- 3.  $A = 38 \text{ cm}^2$
- $A = 84 \text{ cm}^2$
- P = 46 cm

5.

$$A = 20 + 21$$

 $= 41 \, \text{cm}^2$ 

P = 40 cm

Answers of multiple choice questions

- 1. 8
- 3. A

- 4. C
- 5. D
- 6. C

7. В

Unit	4 ASS	255	mer	ήt

- 1. 1. A 2. C 3. D 4. C 5. C 7. D
- 6. C 2. 1, 22 2. 49 3. 4 4. 2×L , 2×w 5. 20 6, 27 8. 36 7. 5 3. 2. D 3. A 1. C
  - 4. D 5. B 7. C

- 4.
- 1. The area =  $7 \times 4 = 28 \text{ m}^2$
- 2.  $P = 4 \times 7 = 28 \text{ m}$  $A = 7 \times 7 = 49 \text{ m}^2$
- 3. First rectangle:

$$A = 1 \times w = 6 \times 3 = 18 \text{ cm}^2$$

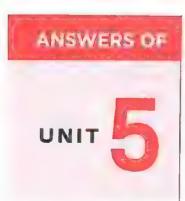
#### Second rectangle:

$$A = 18 \text{ cm}^2$$
,  $w = 2 \text{ cm}$   
 $I = A \div w = 18 \div 2 = 9 \text{ cm}$ 

x = 9 cm

6. C

4. The length of the fence =4+7+5+6+9+13=44 mThe cost =  $44 \times 10 = 440$  L.E.



# Multiplication as a Relationship

▶ Concept 1 : Multiplicative Comparisons

► Concept 2 : Properties and Patterns of Multiplication



## Exercise 21

#### 1.

b. 
$$4 \times 4 = 16$$

c. 
$$2 \times 8 = 16$$

d. 
$$9 \times 3 = 27$$

e. 
$$6 \times 2 = 12$$

#### 2.

a. 
$$3 \times 6 = 18$$

**b.** 
$$7 \times 2 = 14$$

c. 
$$5 \times 5 = 25$$

**d.** 
$$4 \times 2 = 8$$

e. 
$$4 \times 9 = 36$$

**g.** 
$$5 \times 8 = 40$$

h. 
$$5 \times 5 = 25$$

$$1.6 \times 9 = 54$$

#### 3.

a. Five 
$$\begin{bmatrix} 3 & 3 & 3 & 3 & 3 \\ 3 & 3 & 3 & 3 & 3 \end{bmatrix}$$
, 15 = 5 × 3

**b.** Four 
$$[7 \ 7 \ 7 \ 7]$$
,  $28 = 4 \times 7$ 

c. Three 
$$[999, 27 = 3 \times 9]$$

**d.** Five 
$$\begin{bmatrix} 2 & 2 & 2 & 2 & 2 \\ 2 & 2 & 2 & 2 & 2 \end{bmatrix}$$
,  $10 = 5 \times 2$ 

**e.** Four 
$$[3 \ 3 \ 3 \ 3]$$
,  $12 = 4 \times 3$ 

f. Three 
$$[ 6 \ 6 \ 6 \ , 18 = 3 \times 6 ]$$

**g.** Four 
$$\begin{bmatrix} 6 & 6 & 6 & 6 \\ 6 & 6 & 6 & 6 \end{bmatrix}$$
, 24 = 4 × 6

**h.** Five 
$$[7 \ 7 \ 7 \ 7 \ 7]$$
, 35 = 5 × 7

#### 4.

#### 5.

#### 40

#### Hany has 8 photos.

#### Answers of multiple choice questions

14. B

#### 1.

c. 
$$18 = 6 \times m$$

$$d.4 \times 3 = b$$

e. 
$$24 = 4 \times h$$

f. 
$$25 = 5 \times v$$

**g**. 
$$30 = 5 \times d$$

i. 
$$6 \times k = 48$$

j. 
$$27 = b \times 9$$

$$1.8 \times c = 24$$

**m.** 
$$5 \times m = 15$$

a. 
$$y = 50$$

**b.** 
$$a = 15 \div 3 = 5$$

c. 
$$b = 21 \div 7 = 3$$

**d.** 
$$x = 12$$

e. 
$$b = 50 \div 5 = 10$$

f. 
$$m = 16 \div 4 = 4$$

g. 
$$z = 5$$

**h.** 
$$n = 18 \div 2 = 9$$

i. 
$$k = 35 \div 5 = 7$$

#### Answers

#### 3.

- a. Let the number of marbles collected in May be x Equation:  $x = 4 \times 5$
- b. Let the number of cookies of Ahmed he m Equation:  $12 = 3 \times m$
- c. Let the number of times he n. Equation:  $n \times 7 = 21$
- d. Let the number of times Ava ran be a Equation:  $a = 2 \times 4$
- e. Let the number of times Sherif has be v Equation:  $18 = v \times 6$
- f. Let the number of sold salads be b. Equation:  $b = 8 \times 4$
- g. Let the number of sold dogs be k Equation:  $k = 6 \times 2$

- a. Equation: 5 × 6 ≃ a Answer: a = 30The number is 30
- **b.** Equation:  $36 = 4 \times m$ Answer:  $m = 36 \pm 4 = 9$ The number is 9
- c. Equation:  $3 \times 4 = b$ Answer: b = 12The number of figs the older brother ate is 12

- d. Equation:  $n \times 5 = 25$ Answer:  $25 \div 5 = 5$
- Mona sent 5 times as many as Esslam
- e. Equation:  $8 \times 6 = x$ Answer: x = 48
- Wael uses 48 oranges f. Equation:  $4 \times 3 = z$ 
  - Answer: z = 12Nora has 12 pounds

#### 5.

- a. Equation:  $6 = a \times 2$ Answer:  $a = 6 \div 2 = 3$
- **b.** Equation:  $36 = n \times 6$ Answer:  $n = 36 \div 6 = 6$
- c. Equation:  $48 = b \times 4$ Answer:  $b = 48 \div 4 = 12$
- d. Equation:  $48 = m \times 6$ Answer:  $m = 48 \div 6 = 8$
- e. Equation:  $36 = h \times 4$ Answer:  $h = 36 \div 4 = 9$

#### 6.

What Marwan sold =  $3 \times 9 = 27$  bars Esslam sold = 27 - 9 = 18 bars

#### Answers of multiple choice questions

- 1. D
- 2. D
- 3. B

- 4. B
- 5. A
- 6. C

- 7. A
- 8. B
- 9. D

- 10. D
- 11. B
- **12.** C

## **Properties and Patterns** of Multiplication

## Exercise 23

1.

- a. 7
- b 6
- c. 25

- d. 48
- e. 11
- £ 25

- **a**. 15
- h. 9 -3

- i. 5 4
- i. 5 ,5 (Answers may vary)

2.

- a. a = 33
- b, b = 8
- c. a = 8

- d. b = 5
- e. a = 7f. b = 93
- a. k = 11
- h. m = 100 i. n = 7
- i. a = 1

3.

- a. 5
- b. 12
- c. 672 e. () f n
- d. 0 a. 0
- h. 356
- i. 0

4.

- a. 80
- **b.** 500
- c. 3.000

- d. 2,000 g. 1,000
- e. 100 h. 100
- f. 100 i. 12,300

i. 100

5.

Badr solution's =  $6 \times 7 = 42$ 

Salma solution's  $= 7 \times 6 = 42$ 

- , because  $6 \times 7 = 7 \times 6 = 42$
- So, the two solutions are correct.

6.

- $3 \times 8 = 8 \times 3 = 24$
- $4 \times 6 = 6 \times 4 = 24$  (Answers may vary)

7.

- $5 \times 4 = 4 \times 5 = 20$
- $2 \times 10 = 10 \times 2 = 20$  [Answers may vary]

8.  $8 \times 6 = 6 \times 8 = 48$ 

000000

- 000000
- 00000000
- 000000 000000
- 00000000 00000000
- 000000
- 00000000
- 000000 000000
- 00000000 00000000
- 000000
- [Answers may vary]

9.

Tarek says that  $9 \times 1.000 = 900$ 

- and the correct is  $9 \times 100 = 900$ .
- or  $9 \times 1.000 = 9.000$

10.

- a, a = 0
- **b.**  $a = 19 \cdot b = 112$

Answers of multiple choice questions

- 1. B
- 2. D
- 3. D

- 4. C
- 5. C
- 6. A

- 7. B
- 8. C
- 9. A

- 10. C
- 11. A
- 12. A
- 13. B
- 14. B

Exercise 24

- 1.
- a. 5
- **b.** 10
- c. 5

- d. 3
- e. 2
- f. 3

a. 
$$6 \times 4 = 24$$

**b.** 
$$10 \times 3 = 30$$

c. 
$$2 \times 12 = 24$$

**d.** 
$$5 \times 6 = 30$$

**e.** 
$$12 \times 3 = 36$$

$$f. 9 \times 6 = 54$$

$$g. 8 \times 30 = 240$$

h. 
$$20 \times 7 = 140$$

3.

a. 
$$3 \times (2 \times 5) = 3 \times 10 = 30$$

b. 
$$4 \times [6 \times 2] = 4 \times 12 = 48$$

c. 
$$2 \times 3 \times 9 = [2 \times 3] \times 9 = 6 \times 9 = 54$$

**d.** 
$$(3 \times 2) \times 3 = 6 \times 3 = 18$$

**e.** 
$$[4 \times 3] \times 7 = 12 \times 7 = 84$$

f. 
$$[4 \times 5] \times 6 = 20 \times 6 = 120$$

g. 
$$[2 \times 5] \times 8 = 10 \times 8 = 80$$

h. 
$$3 \times (4 \times 5) = 3 \times 20 = 60$$

i. 
$$[3 \times 3] \times 7 = 9 \times 7 = 63$$

j. 
$$[2 \times 2] \times 9 = 4 \times 9 = 36$$

4.

a. 
$$[5 \times 4] \times 2 = 20 \times 2 = 40$$
  
 $5 \times [4 \times 2] = 5 \times 8 = 40$ 

**b.** 
$$(3 \times 6) \times 2 = 18 \times 2 = 36$$
  
  $3 \times (6 \times 2) = 3 \times 12 = 36$ 

c. 
$$(2 \times 3) \times 4 = 6 \times 4 = 24$$
  
 $2 \times (3 \times 4) = 2 \times 12 = 24$ 

**d.** 
$$[8 \times 5] \times 10 = 40 \times 10 = 400$$
  
 $8 \times [5 \times 10] = 8 \times 50 = 400$ 

5.

1. 9

6. a. 4

b. 2

c. 7

f. 9

d 3 a. 11

h. 5

7.

**a.** 
$$7 \times (2 \times 10) = [7 \times 2] \times 10 = 14 \times 10$$
  
= 140

b. 
$$5 \times (5 \times 10) = (5 \times 5) \times 10 = 25 \times 10$$
  
= 250

c. 
$$4 \times [7 \times 100] = [4 \times 7] \times 100$$
  
=  $28 \times 100 = 2,800$ 

d. 
$$3 \times (4 \times 1,000) = (3 \times 4) \times 1,000$$
  
=  $12 \times 1,000 = 12,000$ 

e. 
$$9 \times (5 \times 100) = (9 \times 5) \times 100$$
  
=  $45 \times 100 = 4,500$ 

a. 
$$(100 \times 2) \times 3 = 100 \times [2 \times 3] = 100 \times 6$$
  
= 600

**b.** 
$$(100 \times 5) \times 7 = 100 \times (5 \times 7) = 100 \times 35$$
  
= 3,500

c. 
$$[100 \times 6] \times 3 = 100 \times [6 \times 3] = 100 \times 18$$
  
= 1.800

**d.** 
$$6 \times (9 \times 10) = (6 \times 9) \times 10 = 54 \times 10$$
  
= 540

e. 
$$[1,000 \times 7] \times 6 = 1,000 \times [7 \times 6]$$
  
= 1,000 \times 42 = 42,000

f. 
$$600 \times 4 = 2,400$$

g. 
$$4,000 \times 5 = 20,000$$

Aisha bought =  $3 \times 3 \times 4 = [3 \times 3] \times 4$ =  $9 \times 4 = 36$  bottles.

#### 10.

Hany makes =  $20 \times 6 \times 2$ =  $20 \times [6 \times 2] = 20 \times 12$ = L.E. 240

#### 11.

Angy runs =  $2 \times 5 \times 10 = [2 \times 5] \times 10$ =  $10 \times 10$ = 100 kilometers

#### 12.

Heba and Ashraf multiplied the same factors but in different order.

(Choose the strategy your prefer)

#### 13.

 $2 \times 7 \times 4 = [2 \times 7] \times 4 = 14 \times 4$ 

 $2 \times 7 \times 4$ 

 $= 2 \times 4 \times 7$  (Commutative property)

=  $(2 \times 4) \times 7$  [Associative property]

 $= 8 \times 7 = 56$ 

So  $, 14 \times 4 = 56$ 

#### 14.

What he saves every day

= 5 - 3 = L.E.2

What he saves in 10 weeks

 $= 2 \times 5 \times 10 = (2 \times 5) \times 10 = 10 \times 10$ 

= L.E. 100

#### Answers of multiple choice questions

1. B

2. B

3. B

4. C

**5.** C

6. C

**7.** D

8. D

9. A

10. A

11. B

#### Unit 5 Assessment

#### 1.

1. A

2. B

3. C

4. A

5. C

**6.** D

7. B

#### 2.

1. 21

2.  $5 \times 8 = 40$ 

3. 1

4. 32

5. Commutative

**6**. 63

**7**. 3

**8**. 35

#### 3.

1. C

2. A

**3**. D

4. B

**5**. C

6. C

7. B

#### 4.

- 1. His brother ate =  $4 \times 3 = 12$  figs
- 2. Hany bought =  $3 \times 3 \times 4 = [3 \times 3] \times 4$ =  $9 \times 4 = 36$  bottles
- 3. A.  $[3 \times 2] \times 4 = 6 \times 4 = 24$

B. 
$$5 \times 7 \times 2 = 5 \times 2 \times 7 = (5 \times 2) \times 7$$
  
=  $10 \times 7 = 70$ 

4. A. m = 1,000

**B.** m = 7

C. m = 9

**D.** m = 0

ANSWERS OF

UNIT 6

# Factors and Multiples

► Concept 1: Understanding Factors

▶ Concept 2 : Understanding Multiples



## Exercise 25

#### First: Exercises on factors

	Number		2 tor?	ls a fac	5 tor?		10 tor?
a.	26	(Yes)	No	Yes	No	Yes	No
b.	70	Yes	No	(Yes)	No	(Yes)	No
C.	15	Yes	No	(Yes)	No	Yes	No
d.	17	Yes	No	Yes	No	Yes	No

2.

a 5

h 2.5.10

c. 2

- d = 5
- e. 1,2,4,8
- £ 1.2.4.5.10

3.

- a. is a factor of
- h is not a factor of
- c. is a factor of
- d. is a factor of
- e. is a factor of
- f. is a factor of
- a. is a factor of i. is a factor of
- h, is a factor of i. is a factor of

4.

- a. No specause 23 is an odd number.
- b. yes, because the ones digit in 35 is 5
- c. yes , because 84 is an even number 98 + 4 = 12 and 12 is exiting when skip counting be 3s
- d. No  $_{2}$  because 5+3=8 and 8 does not exist when skip counting by 3s

- e. Yes sherause the number exists. when skip counting by 4s
- f. No shecause the number does not exist when skip counting by 7s
- g. Yes, because 6+3=9 and 9 is existing when skip counting by 9s

5.

a 1.2.4.5.10 and 20



Factor	T-chart
1	20
2	10
4	5

b. 1,2,4,5,8,10,20

Factor	rainbow
1/	11
1110	1111
1245	8 10 20 40

0 ,40	
Factor	T-chart
1	40
2	20
4	10
5	8

c. 1,2,3,4,6,9,12,18 and 36



Factor	T-chart
1	36
2	18
3	12
4	9
6	6

- 6.
- a. 1,2,3 and 6

b. 1,2,5 and 10

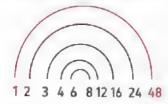
c. 1 - 2 - 19 and 38



d. 1,5 and 25



e. 1,2,3,4,6,8,12,16,24 and 48



f. 1,3,7 and 21



g. 1 and 19



h. 1,5,7 and 35



i. 1 and 13



j. 1,7 and 49

149

7.

- a. 6
- b. 28
- c. 50

- d. 24
- e. 35

## Second: Exercises on prime and composite numbers

8.

- a. prime
- b. composite
- c. prime
- d. prime
- e. prime
- f. composite
- g. prime
- h. primei. composite
- i. primek. composite
- L prime

9.

a. 2

- b. 7
- c. 1, itself
- d. 2

e. 11

- f. 61 , 67
- g. two prime
- h. composite , 4

- a. 1,3,5 and 15, composite
- b. 1,2,3,4,6,8,12 and 24, composite.
- c. 1 and 23 prime
- d. 1 and 37 prime
- e. 1,2,3,6,9 and 18, composite
- f. 1, 2, 4, 8, 16 and 32, composite
- g. 1,3,7 and 21, composite
- h. 1,2,3,4,6 and 12, composite
- i. 1, 2, 5, 10, 25 and 50, composite
- j. 1, 2, 11 and 22, composite
- k. 1 and 31 prime
- L. 1, 2, 4, 11, 22 and 44, composite

94	92	98	94	95	96	9	98	99	100
94	92	83	84	85	846	97	88	69	90
7	72	73	34	78	76	R	7,8	79	80
<b>6</b>	99	86	84	86	86	6	68	59	70
51	3/2	(53)	94	95	56	98	58	69	90
4	42	43	44	45	46	4	48	26	90
1	32	38	34	35	36	3	38	39	90
24	22	23	24	25	26	×	26	29	30
1	12	13	14	18	18	17	18	19	20
1	(2)	(3)	ж	(5)	K	(7)	X	×	70

#### 12.

Ashraf forgot to write 5

The correct answer is: 2,3,5,7 and 11

#### 13.

The numbers are: 47,53,59 and 61

#### 14.

The numbers are: 6,8,9,10,12,14, 15,16,18,20,21 and 22

#### Answers of multiple choice questions

- 1. D
- 2. C
- 3. B

- 4. C
- 5. D
- 6. B

- 7. D
- 8. B
- 9. B

- **10.** A
- 11. A
- **12.** C

- **13.** C
- **14.** B
- **15.** C

#### **16.** B

## Exercise 26

1.

a. Factors of 16: 11, 2, 4, 8, 16 Factors of 20: 11, 2, 4, 5, 10, 20

- b. Factors of 18: 11, 2, 3, 6, 9, 18 Factors of 4: 11, 2, 4
- c. Factors of 20: 1, 2, 4, 5, 10, 20 Factors of 30: 1, 2, 3, 5, 6, 10, 15, 30
- d. Factors of 17 : 1,17
  Factors of 22 : 1,2,11,22
- e. Factors of 21: 1,3,7,21 Factors of 35: 11,5,7,35
- f. Factors of 36: 1, 2, 3, 4, 6, 9, 12, 18, 36 Factors of 42: 1, 2, 3, 6, 7, 14, 21, 42
- 2.
- a. 1,2,4
- b. 1,5
- c. 1 17
- d. 1,2,3,6
- e. 1,5
- f. 1,2,11,22

#### 3.

a. Factors of 4:1,2,4

Factors of 6:1,2,3,6

Common factors:1,2

GCF:2

b. Factors of 10:1,2,5,10

Factors of 30:1,2,3,5,6,10,15,30

Common factors: 1,2,5,10

GCF:10

c. Factors of 12:1,2,3,4,6,12

Factors of 18:1,2,3,6,9,18

#### **Answers**

Common factors:1,2,3,6

d. Factors of 6 are:1,2,3,6
Factors of 12 are:1,2,3,4,6,12
Common factors:1,2,3,6
GCE:6

e. Factors of 10:1,2,5,10
Factors of 15:1,3,5,15
Common factors:1,5
GCE:5

OCI . J

4.

a. Common factors:1,3,5,15 GCF:15

b. Common factors:1,2,3,6

c. Common factors: 1,2,5,10 GCF: 10

d. Common factors:1,2,5,10 GCF:10

e. Common factors:1,2
GCF:2

f. Common factors:1,5

g. Common factors:1,2,4,8

h. Common factors:1,11 GCF:11 i. Common factors:1,2,4

j. Common factors:1,2,3,6

k. Common factors:1,2,3,6

L. Common factors:1,3

5.

a. Factors of 21:1,3,7,21 Factors of 14:1,2,7,14 Common factors:1,7

GCF:7

The greatest number of groups is 7 groups of 3 pencils and 2 erasers in each group

b. Factors of 40:1,2,4,5,8,10,20,40

Factors of 32:1,2,4,8,16,32

Common factors: 1,2,4,8

GCF:8

The greatest number of teams is 8 teams of 5 girls and 4 boys in each team

c. Factors of 36:1,2,3,4,6,9,12,18,36 Factors of 27:1,3,9,27 Common factors:1,3,9 GCF:9 The greatest number of groups is 9 groups of 4 girls and 3 boys in each aroup

d. Factors of 7:1.7

Factors of 14:1,2,7,14

Common factors: 1.7

GCE:7

The greatest number of flower arrangements is 7 arrangements of 1 rose and 2 daisies in each arrangement

e. Factors of 60:1,2,3,4,5,6,10, 12 - 15 - 20 - 30 - 60

Factors of 24:1,2,3,4,6,8,12,24

Common factors: 1, 2, 3, 4, 6, 12

GCF: 12

The greatest number of groups is 12 groups of 5 blue marbles and 2 red marbles in each group

f. Factors of 24:1,2,3,4,6,8,12,24

Factors of 36:1,2,3,4,6,9,12, 18 . 36

Common factors: 1, 2, 3, 4, 6, 12

GCF: 12

The greatest number of packs is 12 of 2 apples and 3 bags of candy in each pack

#### 6.

Factors of 15:1,3,5,15

Factors of 18:1,2,3,6,9,18

Factors of 21:1,3,7,21

Common factors:1,3

GCE:3

#### Answers of multiple choice questions

1. C

2.

R

4. D

5. A.B C

6. C

7. C

8.

9. C

10. D

## **Understanding Multiples**

## Exercise 27

1.

a.

## 0 1 7 3 6 5 6 7 0 7 (8 70 27 15 16 78 16 77 18 7

The multiples of 2 are:

0,2,4,6,8,10,12,14,16,18, 20,22,24,26,28,30,32,34,...

b.



The multiples of 5 are:

0,5,10,15,20,25,30,35,...

2.

а

1         2         3         4         5         6         7         8         9         10           11         12         13         14         15         16         17         18         19         20           21         22         23         24         25         26         27         28         29         30           31         32         33         34         35         36         37         38         39         40           41         42         43         44         45         46         47         48         49         50           51         52         53         54         55         56         57         58         59         60           61         62         63         64         65         66         67         68         69         70           71         72         73         74         75         76         77         78         79         80           81         82         83         84         85         86         87         88         89         90           91         92         93         9	-									
21         22         23         24         25         26         27         28         29         30           31         32         33         34         35         36         37         38         39         40           41         42         43         44         45         46         47         48         49         50           51         52         53         54         55         56         57         58         59         60           61         62         63         64         65         66         67         68         69         70           71         72         73         74         75         76         77         78         79         80           81         82         83         84         85         86         87         88         89         90	1	2	3	4	5	6	7	8	9	10
31         32         33         34         35         36         37         38         39         40           41         42         43         44         45         46         47         48         49         50           51         52         53         54         55         56         57         58         59         60           61         62         63         64         65         66         67         68         69         70           71         72         73         74         75         76         77         78         79         80           81         82         83         84         85         86         87         88         89         90	11	12	13	14	15	16	17	18	19	20
41     42     43     44     45     46     47     48     49     50       51     52     53     54     55     56     57     58     59     60       61     62     63     64     65     66     67     68     69     70       71     72     73     74     75     76     77     78     79     80       81     82     83     84     85     86     87     88     89     90	21	22	23	24	25	26	27	28	29	30
51     52     53     54     55     56     57     58     59     60       61     62     63     64     65     66     67     68     69     70       71     72     73     74     75     76     77     78     79     80       81     82     83     84     85     86     87     88     89     90	31	32	33	34	35	36	37	38	39	40
61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90	41	42	43	44	45	46	47	48	49	50
71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90	51	52	53	54	55	56	57	58	59	60
81 82 83 84 85 86 87 88 89 90	61	62	63	64	65	66	67	88	69	70
7.0	71	72	73	74	75	76	77	78	79	80
91 92 93 94 95 96 97 98 99 100	81	82	83	84	85	86	87	88	89	90
	91	92	93	94	95	96	97	98	99	100

The multiples of 9 are:

9,18,27,36,45,54,63,72,81,90

b.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	94	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

The multiples of 10 are:

10,20,30,40,50,60,70,80,90

3.

a. 12,6,24,18 b.6,21,15,36

c. 8,16,24,32 d. 30

e. 31,16

4.

a. 7,14,21,28,35 [Answers may vary]

b. 8,16,24,32,40 [Answers may vary]

c. 0,3,6,9,12,15,18

d. 0,5,10,15,20,25,30

e. 0,9,18,27,36,45,54

5.

a. 20

b. 32

**c**. 30

d. 90

e. 18

f. 33 i. 18

g. 45 h. 7

6.

a. The multiples of 2 are:

0,2,4,6,8,10,12,14,16,18,20

The multiples of 3 are:

0,3,6,9,12,15,18

The common multiples are:

0,6,12,18

b. The multiples of 5 are:

0,5,10,15,20,25,30

The multiples of 4 are:

0,4,8,12,16,20,24,28

The common multiples are: 0,20

- a. 8
- h. 21
- c. 18 +36

- d. 24,48
- e. 35,70
- f 28 -56

[Answers may vary]

8.

Nagwa will visit her grandparents on: May 4 , 8 , 12 , 16 , 20 , 24 and 28

The number of visits is: 7 times

9.



Tahani will walk 2 km

10.

- a. 30,60
- b. 60,120

[Answers may vary]

#### Answers of multiple choice questions

- 1. A
- 2. B
- **3.** B

- 4. C
- 5. A
- 6. A

- 7. D
- 8. A
- \_ **9.** D

- 10. A
- 11. D
- 12. B , D

## Exercise 28

1.

- a. 5 ,10 ,15 (Answers may vary)
- b. 6,12,18 (Answers may vary)
- c. 2,3,10 (Answers may vary)
- d. 27

- e. 36,4,9,4,9,36
- f. 21,21,3,7

2.

- a. ves
- b. ves
- c. yes

- d. yes
- e. no
- f. no

- g. yes
- h. no
- i. a factor of 25 j. a multiple of 8
- k. a factor of 9 l. 7

3.

- a. 3 is a factor of 6
  - 6 is a factor of 12
  - 12 is a multiple of 3

[Answers may vary]

- b. 8 is a multiple of 4
  - 16 is a multiple of 8
  - 4 is factor of 24

[Answers may vary]

- c.  $2 \times 2 = 4$ ,  $3 \times 4 = 12$ 
  - , then all numbers are factors of 12
  - 4 is a multiple of 2
  - 12 is a multiple of 3

[Answers may vary]

- a. 45 (Answers may vary)
- **b**. 16
- c. 12 (Answers may vary)
- d. 28

7. A

Multiples of 4:12,16

Factors of 24:1,2,3,4,6,8,12,24

The number is : 12

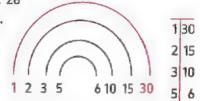
#### Answers of multiple choice questions

9.

1.	В	2.	Α	3.	Α	
4.	C	5.	C	6.	D	

Unit 6 Assessment			
1.			
1. A	<b>2</b> . C	<b>3.</b> C	
4. D	5. A	6. C	
<b>7.</b> B			
2.			
1. 1	2. 0	<b>3</b> . 2	
4. 2	<b>5</b> . 5	6. 3	
<b>7.</b> 7	8. 6		
3.			
1. A	<b>2.</b> D	3. C	
4. B	5. D	6. B	
7. C			
4.			
1. 28			
_			

2.



Factors of 30:1, 2, 3, 5, 6, 10, 15, 30

- 3. Multiples of 8:0,8,16,24,32,40 Multiples of 12:0,12,24,36 Common multiples: 0 , 24
- 4. Factors of 24:1,2,3,4,6,8,12,24 Factors of 40:1,2,4,5,8,10,20,40 Common factors: 1,2,4,8 GCF:8



## Multiplication and Division: Computation and Relationships

► Concept 1 : Multiplying by 1-Digit and 2-Digit Factors

▶ Concept 2 : Dividing by 1-Digit Divisors



## Concept 1

### Multiplying by 1-Digit and 2-Digit Factors









17	×	4	=	68	

Tens	Ones
6	3

6 tens

3 ones

$$21 \times 3 = 63$$

C.

b.

Tens	Ones
7	0

7 tens

$$14 \times 5 = 70$$

2.

a. 
$$32 = 30 + 2$$

30

2

$$7 \quad 7 \times 30 = 210 \quad 7 \times 2 = 14$$

$$50.7 \times 32 = 210 + 14 = 224$$

b. 88 = 80 + 8

80

8

So 
$$988 \times 6 = 480 + 48 = 528$$

c. 
$$91 = 90 + 1$$

90  $4 \times 90 = 360$ 

$$d.35 = 30 + 5$$

30

So 
$$35 \times 7 = 210 + 35 = 245$$

e. 
$$249 = 200 + 40 + 9$$

200

$$\begin{array}{c|cccc}
 & 200 & 40 & 9 \\
\hline
5 \times 200 & 5 \times 40 & 5 \times 9 \\
= 1,000 & = 200 & = 45
\end{array}$$

So 
$$249 \times 5 = 1,000 + 200 + 45$$
  
= 1.245

$$f. 483 = 400 + 80 + 3$$

400

80

3

3

So 
$$5 \times 483 = 2,000 + 400 + 15$$
  
= 2.415

q. 
$$723 = 700 + 20 + 3$$

700

20

7	7×700	7 × 20	7×3
	= 4,900	= 140	= 21

So 
$$7 \times 723 = 4,900 + 140 + 21$$
  
= 5.061

h. 
$$530 = 500 + 30$$
  
 $500$  30  
 $7 \times 500$   $7 \times 30$   
 $= 3,500$   $= 210$ 

So 
$$530 \times 7 = 3,500 + 210 = 3,710$$

i. 
$$4,734 = 4,000 + 700 + 30 + 4$$
  
 $4,000 700 30 4$   
 $5 5 \times 4,000 5 \times 700 5 \times 30 5 \times 4$   
 $= 20,000 = 3,500 = 150 = 20$ 

So 
$$4,734 \times 5 = 20,000 + 3,500 + 150 + 20 = 23,670$$

So 
$$,2,391 \times 8 = 16,000 + 2,400 + 720 + 8 = 19,128$$

a. 
$$8 \times [30 + 5] = [8 \times 30] + [8 \times 5]$$
  
=  $240 + 40 = 280$ 

**b.** 
$$7 \times (60 + 8) = (7 \times 60) + (7 \times 8)$$
  
=  $420 + 56 = 476$ 

c. 
$$2 \times (700 + 20 + 4) = (2 \times 700)$$
  
+  $(2 \times 20) + (2 \times 4)$   
= 1,400 + 40 + 8  
= 1,448

**d.** 
$$3 \times [600 + 80 + 4] = [3 \times 600]$$
  
  $+ [3 \times 80] + [3 \times 4]$   
  $= 1,800 + 240 + 12$   
  $= 2,052$ 

e. 
$$5 \times [100 + 30 + 5] = [5 \times 100]$$
  
+  $[5 \times 30] + [5 \times 5]$   
=  $500 + 150 + 25$   
=  $675$ 

f. 
$$8 \times [200 + 10 + 4] = [8 \times 200]$$
  
+  $[8 \times 10] + [8 \times 4]$   
=  $1,600 + 80 + 32$   
=  $1,712$ 

g. 
$$3 \times (1,000 + 400 + 70 + 6)$$
  
=  $(3 \times 1,000) + (3 \times 400) + (3 \times 70)$   
+  $(3 \times 6) = 3,000 + 1,200 + 210 + 18$   
=  $4,428$ 

h. 
$$9 \times [4,000 + 500 + 20 + 3]$$
  
=  $[9 \times 4,000] + [9 \times 500] + [9 \times 20]$   
+  $[9 \times 3] = 36,000 + 4,500 + 180$   
+  $27 = 40,707$ 

i. 
$$4 \times (9,000 + 30 + 5)$$
  
=  $(4 \times 9,000) + (4 \times 30) + (4 \times 5)$   
=  $36,000 + 120 + 20 = 36,140$ 

#### Answers

4.

a. 15

b. 1230

- 200 40 6 5 1,000 200 30
- c. 17

- d. 60
- e. 100 , 30
- f. 7,000 > 40

8

8 × 9

= 72

- g. 1.000 ,800 ,5
- h. 592

i. 6

5.

58 × 9

58 = 50 + 8

- 50 × 9 = 450
- So  $_{9}$ 58 × 9 = 450 + 72 = 522 km

6.

- a. The money which she paid = 13 × 6 = 78 L.F.
- **b.** Number of candy pieces  $= 15 \times 9 = 135$  candy pieces
- c.  $6 \times 145 = 6 \times (100 + 40 + 5)$ =  $(6 \times 100) + (6 \times 40) + (6 \times 5)$ = 600 + 240 + 30= 870 pounds
- d.  $22 \times 5 = [20 + 2] \times 5$ =  $(20 \times 5) + (2 \times 5)$ = 100 + 10= 110 passengers
- e.  $1,280 \times 3 = (1,000 + 200 + 80) \times 3$ =  $(1,000 \times 3) + (200 \times 3)$ +  $(80 \times 3)$ = 3,000 + 600 + 240= 3,840 centimeters

7.

The student decomposed 36 as 3 + 6 and that is wrong

36 decomposed as 30 + 6

	30	6	
8	8 × 30 = 240	8 × 6 = 48	

So  $-36 \times 8 = 240 + 48 = 288$ 

#### Answers of multiple choice questions

- 1. A
- 2. A
- **3.** D

- 4. C
- 5. B
- 6. C

- 10. C
- **11.** D
- 12. D

**13.** B

## Exercise 30

1.

a. 28

168

**b.** 239

#### d.

#### 2.

#### b.

$$\begin{array}{c|cccc}
 & 29 \\
 \times & 4 \\
\hline
 & 80 & (4 \times 20) \\
 & + & 36 & (4 \times 9) \\
\hline
 & & & & \\
\hline
 & & & & \\
\end{array}$$

C.		343	
	×	5	
		1,500	(5 × 300)
	+	200	$[5 \times 40]$
	+	15	$[5 \times 3]$
		1,715	

#### d.

	678	
×	6	
	3,600	[6×600]
+	420	$\{6 \times 70\}$
+	48	$[6 \times 8]$
	4,068	

#### ė.

	284	
×	4	
	16	$[4 \times 4]$
+	320	$[4 \times 80]$
+	800	$[4 \times 200]$
	1,136	

### f.

g.

h.

18,924

3.

a.

② 27 30 b. 7 3 × × 210 81

C.

×

123 d.

492 **9** 

- 5 ж 3,150 f. 204

> 2 × 408

①@ 126

7

882

g.

h. 1,424

① 2,213 i.

4 8.852

×

3 × 7.350

1.390

2,780

2

4.

**Estimate** Answer a. 20 4 17 × 6 6 120 102

b. Estimate

30 3 90

3 × 96

Answer

32

Estimate Answer 130 134 × × 2 2 260 268

**Estimate** d. 800

3 2,400

12 758 2,274

Answer

e. Estimate

1,300 2 × 2,600 Answer

1,349 × 2,698

- £ Estimate Answer 1 1 2 2.327 2.000 × 8.000 9.308
- 5. Student 2 solved the problem correctly student 1 error was no regrouping 1ten , while student 3 error was rearouping 1 ten with hundreds.
- a. Number of candy pieces  $= 15 \times 9 = 135$  candy pieces

7.

- b. The maximum number of passengers  $= 22 \times 5 = 110$  passengers
- c. The number of books =  $35 \times 5$ = 175 books
- d. He paid =  $85 \times 4 = 340$  pounds
- e. They won =  $150 \times 6 = 900$  pounds
- f. Mohamed paid =  $5 \times 145$ = 725 pounds
- g. They won =  $150 \times 5 = 750$  pounds
- **h.** The mass =  $124 \times 5 = 620 \text{ kg}$
- i. Number of toys =  $4.256 \times 3$ = 12.768 toys

8, 8, because  $3 \times 8 = 24$  and its the only digit multiplied by 3 gives a number its ones digit is 4

#### Answers of multiple choice questions

- 1. В 4 C
  - 5.
- 3. 6. D

В

- 7. C 10. C
- R. C
- 9.
- Exercise 31
- 1.
- a. 1.400
- b. 1.500
- c. 1.600

- d. 3,000
- e. 1.600
- f. 1.800

q. 4,900

i. 140

- h. 6.300
- L 8.100

- m. 4.500
- k. 1.200 n. 3.500
- L 3.200 0. 420

- p. 660
- g. 1.540
- r. 15

- s. 12
- t. 50
- u. 3

2

- 2.
- a. Problem:  $40 \times 62$

Area model :

60

40  $40 \times 60 = 2.400$  $40 \times 2 = 80$ 

- Numbers and symbols: 2,480
- b. Problem: 70 x 55.

Area model:

50 5 70  $70 \times 50 = 3.500$  $70 \times 5 = 350$ 

- Numbers and symbols: 3,850
- c. Problem: 54 x 30.

Area model:

50

4

30 l  $30 \times 50 = 1.500$   $30 \times 4 = 120$ 

Numbers and symbols: 1,620

d. Problem: 40 × 78

Area model:

70 8  $40 \overline{)40 \times 70 = 2,800 \overline{)40 \times 8 = 320}}$ 

Numbers and symbols: 3,120

e. Problem: 44 × 20

Area model:

40 4 20 20 × 40 = 800 20 × 4 = 80

Numbers and symbols: 880

f. Problem:  $15 \times 30$ 

Area model:

Numbers and symbols: 450

g. Problem:  $10 \times 40$ 

Area model:

40 10 10 × 40 = 400

Numbers and symbols: 400

h. Problem:  $72 \times 40$ 

Area model:

70 2  $40 40 \times 70 = 2,800 40 \times 2 = 80$ 

Numbers and symbols: 2,880

3.

a. The price =  $26 \times 10$ 

 $26 \times 10 = 200 + 60 = 260$  pounds

- **b.** He paid =  $20 \times 40 = 800$  pounds
- c. Khaled paid =  $15 \times 40$

10 5 40  $40 \times 10 = 400$   $40 \times 5 = 200$ 15 × 40 = 400 + 200 = 600 pounds

d. They pay in all  $= 52 \times 40$ 

50 2  $40 \boxed{40 \times 50 = 2,000 \boxed{40 \times 2 = 80}}$  $52 \times 40 = 2,000 + 80 = 2,080 \text{ pounds}$ 

e. They need to pay = 38 × 30

30 8  $30 30 \times 30 = 900 30 \times 8 = 240$ 

 $38 \times 30 = 900 + 240 = 1,140$  pounds

4.

The answer is not reasonable  $_{2}$  because the student multiplied  $20 \times 50 = 100$ 

While  $20 \times 50 = 1,000$ So  $22 \times 50 = 1,100$ 

#### Answers of multiple choice questions

**1.** B **2.** B

2. B 3. C 5. D 6. C

C 8. B

3. B 9. A I. C 12. C

## Exercise 32

- 1.
- a. 3 R 2
- b. 3 R 1
- c. 6 R 2
- H AR3
- a 2 R 2
- f. 2 R 2

- 2.
- a. 6 R 1
- h. 2 R 4
- c. 7 R 2
- d. 3 R 4
- e. 5 R 2
- f. 8 R 1
- a. 5 R 1
- h. 10 R 3
- i. 5 R 5
- 3.
- a.  $20 \div 7 = 2R6$
- b.  $(18 \div 9 = 2R0)$
- c.  $31 \div 8 = 3 R7$
- $d.(72 \div 9 = 8 R 0)$
- e.  $51 \div 5 = 10 R1$
- $f.(22 \div 2 = 11 R \Omega)$
- $q.44 \div 6 = 7R2$
- $h.(24 \div 3 = 8R0)$
- i.  $65 \div 10 = 6 R 5$
- 4.
- a. 3
- b. 5
- c. 48
- d. the divisor
  - e. 2
- f. 3

- g. 6
- h. 3,4
- i. 1 1

- 1.5,1
- 5.
- a.  $15 \div 4 = 3R3$

Each friend will take 3 pies and 3 extra pies will be left.

b.  $19 \div 9 = 2R1$ 

Each friend will take 2 hisquits and 1 biscuit is left over

c.  $48 \div 5 = 9R3$ 

10 hoxes will be needed . 9 hoxes will be filled with mugs and 1 more box for the 3 extra mugs.

d. 40 students will need one bus and the 20 extra students will need another bus So . 2 buses are needed.

6.

$$[4 \times 9] + 3 = 36 + 3 = 39$$

Ahmed had at the start 39 photos.

#### Answers of multiple choice questions

- 1. A
- 2. C
- 3. B

11. A

4. C

12. D

- 5. C
- 6. B 10. A
- 7. A 8. A

- 9. C 13. B
- 14. B

## Exercise 33

- 1.
- a.
  - 3 30

  - 300
  - 3.000
- b. 6 60
  - 600 6.000
- C. 7
  - 70
  - 700
  - 7.000

Equation	Basic (Related) Fact	Quotient
600 ÷ 3	6 ÷ 3 = 2	200
150 ÷ 5	15 ÷ 5 = 3	30
1,200 ÷ 6	12 ÷ 6 = 2	200
200 ÷ 4	20÷4=5	50
700 ÷ 7	7÷7=1	100
6,400 ÷ 8	64 ÷ 8 = 8	800
4,500 ÷ 9	45 ÷ 9 = 5	500
270 ÷ 3	27 ÷ 3 = 9	90

3.

- a. 9
- b. 6
- c. 20

- d. 90
- e. 30
- f. 110

- **a.** 70
- h. 70
- i. 900

- i. 800
- k. 1.000
- L 900

- m. 5,000
- n. 9,000
- o. 6.000

4.

- a. 3
- b. 6
- c. 7

- d. 7
- e. 90
- f. 2,800

- q. 2
- h. 8
- k. 24,000
- 1. 9 L 9.000

- j. 81,000 m. 25,000
- n. 48,000
- o. 42,000

5.

a.  $60 \div 3 = 20$ 

Each period will be 20 minutes long.

**b.**  $120 \div 12 = 10$ 

There are 10 books in each class

c.  $180 \div 9 = 20$ 

It will take him 20 days.

d.  $3.000 \div 5 = 600$ 

600 students donated

**e.**  $8.100 \div 90 = 90$ 

They will need 90 cars

So , they can not all take the same metro.

6.

 $450 \div 50 = 9$ 

There are 9 flowers in each row

#### Answers of multiple choice questions

- 1. B
- 2. D
- 3. C 4. C

- 5. C
- 6. D
- 7. B
- 8. C

- 9. C
- 10. C 11. A
- 12. C
- 13. A 14. B

## Exercise 34

1.

a.  $64 \div 2$ 

$$\begin{array}{c|cccc}
2 & 2 \times 30 = 60 & 2 \times 2 = 4 \\
\hline
30 & 2
\end{array}$$

- 60 + 4 = 64 R O
- 30 + 2 = 32
- $50.64 \div 2 = 32$

$$4 \boxed{4 \times 20 = 80 \quad 4 \times 1 = 4}$$
 R1

$$80 + 4 + 1 = 85$$

$$So_{9}85 \div 4 = 21R1$$

#### c. $217 \div 5$

$$5 \boxed{5 \times 40 = 200 \mid 5 \times 3 = 15}$$
 R 2

$$200 + 15 + 2 = 217$$

$$40 + 3R2 = 43R2$$

So 
$$,217 \div 5 = 43 R2$$

#### **d**. $159 \div 3$

$$3 \times 50 = 150 \quad 3 \times 3 = 9$$

$$50 + 3 = 53$$

So 
$$_{9}159 \div 3 = 53$$

#### e. 636 ÷ 6

$$600 + 36 = 636 R 0$$

$$100 + 6 = 106$$

$$50.636 \pm 6 = 106$$

#### f. 484 ÷ 8

So 
$$9484 \div 8 = 60 R 4$$

#### 2.

 $a. 48 \div 4$ 

$$4 \boxed{ 4 \times 10 = 40 } \boxed{ 4 \times 2 = 8}$$

$$40 + 8 = 48 R O$$

$$10 + 2 = 12$$

So 
$$_{3}48 \div 4 = 12 R O$$

b.  $67 \div 3$ 

$$3 \times 20 = 60 \quad 3 \times 2 = 6 \quad R1$$

$$60 + 6 + 1 = 67$$

$$So_{2}67 \div 3 = 22 R1$$

c. 246 + 6

$$6 6 \times 40 = 240 6 \times 1 = 6$$
 $40$ 
1

$$240 + 6 = 246 RD$$

$$40 + 1 = 41$$

So 
$$.246 \div 6 = 41$$

d. 1,596 ÷ 3

$$500 + 30 + 2 = 532$$

So 
$$_{9}$$
1,596  $\div$  3 = 532

#### 3.

a.  $63 \div 3$ 

$$3 \times 20 = 60 \quad 3 \times 1 = 3$$

$$60 + 3 = 63 R O$$

$$20 + 1 = 21$$

So , the share of each group is 21 muffines.

b. 89 ÷ 6

$$60 + 24 + 5 = 89$$

$$10 + 4R5 = 14R5$$

Each classroom will get 14 books and 5 books are left over.

c.  $545 \div 5$ 

5 5 × 100 = 500	5×9=45
100	9

500 + 45 = 545 R O

$$100 + 9 = 109$$

She worked 109 days.

d.  $92 \div 4$ 

-		
4	$4 \times 20 = 80$	4 × 3 = 12
	20	3

80 + 12 = 92 R O

20 + 3 = 23

Each friend will get 23 stickers.

e. 492 ÷ 4

4 4×100 = 400	4×20 = 80	4×3=12
100	20	3
400 + 80 + 12	= 492 R 0	

100 + 20 + 3 = 123

123 cars could park in each lot.

#### Answers of multiple choice questions

1. D

2.

3. B

4. B

5. |

6. A

7. A

8. B

9. C

#### 10. C

## Exercise 35

1.

a. 4 72 10 - 40 32 8 - 32 0

$$72 \div 4 = 10 + 8 = 18$$

> $897 \div 4 = 200 + 20 + 4 = 224$ and the remainder is 1

 $590 \div 5 = 100 + 10 + 8 = 118$ 

d. 4 
$$892 200$$

$$- 800$$

$$- 80$$

$$- 80$$

$$- 80$$

$$- 80$$

$$- 12$$

$$- 12$$

$$0$$

$$- 892 ÷ 4 = 200 + 20 + 3 = 223$$

 $925 \div 6 = 100 + 50 + 4 = 154$ and the remainder is 1

 $1,216 \div 3 = 400 + 5 = 405$ and the remainder is 1

2.

The dividend 68 is between 40 and 80 , then  $40 \div 4 = 10$  ,  $80 \div 4 = 20$  , then the quotient is between 10 and 20

b. 457 ÷ 3

The dividend 457 is between 300 and 600 , then  $300 \div 3 = 100$  ,  $600 \div 3 = 200$ 

• then the quotient is between 100 and 200

c. 87 ÷ 2

The dividend 87 is between 80 and 100, then  $80 \div 2 = 40$ ,  $100 \div 2 = 50$ 

then the quotient is between 40 and 50

3.

a. The dividend 632 is between 400 and 800 , then  $400 \div 8 = 50$  ,  $800 \div 8 = 100$ 

The quotient is between 50 and 100

b. The dividend 312 is between 200 and 400  $\circ$  then 200  $\div$  4 = 50  $\circ$  400  $\div$  4 = 100

The quotient is between 50 and 100

c. The dividend 762 is between 450 and 900, then  $450 \div 9 = 50$ ,  $900 \div 9 = 100$ The quotient is between 50 and 100

- d. The dividend 495 is between 300 and 600, then 300 ÷ 6 = 50, 600 ÷ 6 = 100
   The quotient is between 50 and 100
- **e.** The dividend 536 is between 400 and 800 then  $400 \div 8 = 50$   $800 \div 8 = 100$

The quotient is between 50 and 100

- f. The dividend 3,748 is between 2,000 and 4,000  $\cdot$  then 2,000  $\div$  2 = 1,000  $\cdot$  4,000  $\div$  2 = 2,000 The quotient is between 1,000 and 2.000
- g. The dividend 4,681 is between 3,000 and 6,000  $\circ$  then 3,000  $\div$  3 = 1,000  $\circ$ 6,000  $\div$  3 = 2,000 The quotient is between 1,000 and 2,000
- h. The dividend 8,642 is between 5,000 and 10,000  $\Rightarrow$  then 5,000  $\div$  5 = 1,000  $\Rightarrow$  10,000  $\div$  5 = 2,000 The quotient is between 1,000 and 2,000

4.

a.		18	b.		21R1
	3	54		4	85
	_	3		_	8
		24			05
	_	24		_	4
		0	1		1

Ċ.		11 R 3	d.		13 R 2
	5	58		3	41
	_	5		-	3
		80			11
	_	5		_	9
		3			2
					4

5.

 $_{2}$  then 454  $\div$  3 = 151 R 1

, then  $192 \div 6 = 32$ 

$$_{2}$$
 then 778  $\div$  2 = 389

18

0

$$_{2}$$
 then 912  $\div$  3 = 304

#### e.

• then 
$$512 \div 8 = 64$$

• then 
$$336 \div 8 = 42$$

# g.

$$_{2}$$
 then 368  $\div$  3 = 122 R 2

• then 
$$1,304 \div 4 = 326$$

# Answers

• then 
$$4,858 \div 4 = 1,214 R 2$$

then 
$$3,650 \div 5 = 730$$

, then 
$$1,500 \div 5 = 300$$

• then 
$$2,385 \div 5 = 477$$

6.		012
The share of each one	7	84
= 84 + 7	-	17
= 12 stickers		14
- 12 SCICIOS	_	14
		0

7.		125
The number of students	5	625
in each floor	_	5
il each floor		125
= 625 ÷ 5	_	10
= 125 students		25
	-	25
		0

8.		206
He covers in one hour	4	824
= 824 ÷ 4	_	8
= 206 meters		024
	_	24
		0

# 9. 321The number of pupils in each floor 063= $963 \div 3$ = 321963 9 063 = $963 \div 3$ = 3210 03

10.		20 👞
The total = $172 + 8 = 180$	9	180
Number of microbuses	_	18
= 180 ÷ 9		0
= 20 microbuses		0

11. F	irst strat	egy	Secon	d strategy 112
7	784	100	7	784
-	700		_	7
	84	10		80
-	70		****	7
	14	2		14
-	14		-	14
	0		-	0

then 
$$784 \div 7 = 100 + 10 + 2 = 112$$

12.		0844
The share of each of them	3	2,532
= 2,532 ÷ 3	_	13
= 844 pounds	-	12
		12
	_	12
		0

# 13. 59

# Answers of multiple choice questions

<b>1.</b> B	<b>2.</b> B	<b>3.</b> D	4. A
<b>5.</b> B	6. B	<b>7.</b> B	8. C
9. D	<b>10.</b> D	<b>11.</b> B	12. A

# Exercise 36

1.

**a.** 
$$288 \div 6 = 48$$
 **b.**  $300 \div 4 = 75$ 

**c.** 
$$1,296 \div 8 = 162$$
 **d.**  $5,535 \div 9 = 615$ 

**a.** 
$$318 \div 6 = 53$$
 **b.**  $1,869 \div 3 = 623$ 

c. 
$$1,300 \div 4 = 325$$
 d.  $2,525 \div 5 = 505$ 

**e.** 
$$42 \times 7 = 294$$
  
 $294 \div 7 = 42$ 

f. 
$$93 \times 9 = 837$$
  
 $837 \div 9 = 93$ 

g. 
$$173 \times 6 = 1,038$$
  
 $1,038 \div 6 = 173$ 

h. 
$$349 \times 8 = 2,792$$
  
 $2,792 \div 8 = 349$ 

3.		278
a. 834 ÷ 3	3	834
The quotient is	_	6
between 200 and 300		23
Solution: 278	-	21
		24
	-	24
		0

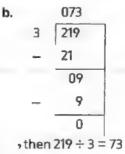
#### Answers

<b>b</b> . 346 ÷ 5		069	
The quotient is	5	346	
between 60 and 80	_	30	
Solution: 69 R1		46	
	-	45	
			_

e. 1,429 ÷ 7	0204
The quotient is 7	1,429
between 200 and 300 -	14
Solution: 204 R1	02
-	0
	29

f. 4,590 ÷ 3		1,530 🗻
The quotient is	3	4,590
between 1,000 and	_	3
2,000		15
Solution: 1,530	-	15
		09
		9
		0

<b>-</b>			
a.		039	
	4	156	
	-	12	
		36	
	_	36	
		0	
	, then	159 ÷ 4 =	39



c. 05
5 27
- 25
2 then 
$$27 \div 5 = 5 R 2$$

$$_{2}$$
 then 583  $\div$  6 = 97 R1

$$_{2}$$
 then 1,545  $\div$  5 = 309

$$_{2}$$
 then 2,704  $\div$  3 = 901 R 1

9. 
$$\frac{1,631}{6,524}$$

$$-\frac{4}{25}$$

$$-\frac{24}{12}$$

$$-\frac{12}{04}$$

$$-\frac{4}{0}$$

$$+ \frac{1}{0}$$

$$_{2}$$
 then 3,017  $\div$  3 = 1,005 R 2

# Answers of multiple choice questions

C

- 1.
- 2.
- 3.

C

- 4. C 7. A
- 5. A
- 6. C
- 8. C
- 9. D

# mil 7 Assessment

- 1.
- 1. B 4. C
- **2**. C **5**. C
- 3. D 6. A

- 7. C
- 2.
- 1. 300,70,2
- 2. 4,000
- 3. 6 , 2,166 , 361 5. 653
- 4. 90 6. 641

7. 123

8. 313

- 3.
- 1. A 4. A
- 2. C
- 5. D
- 3. A 6. B

7. C

- 4.
- 1. 75
- 2.

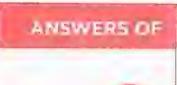
5	7,425	1,000
_	5,000	
	2,425	400
_	2,000	
	425	80
_	400	
	25	5
_	25	
	0	

- then  $7,425 \div 5 = 1,000 + 400 + 80 + 5$ =1,485
- 3. The length of 4 buses

= 5,080 centimeters

12 1,270

- $= 4 \times 1,270$
- × 5,080
- 4. He paid =  $87 \times 4 = 348$  pounds



UNIT 8

# Order of Operations

► Concept 1:

Order of Operations



# **Order of Operations**

# Exercise 37

1.

- a. Add , multiply
- b. Correct
- c. Correct.
- d. Divide subtract
- e. Correct
- f. Subtract , divide , add

2.

- a. 26 + 50 = 76
- b. 3+4=7
- c. 4-2=2
- d. 30 12 = 18
- e. 200 160 = 40 f. 16 + 13 = 29
- a.8 + 4 = 12
- h.  $24 \div 3 = 8$
- i.  $12 \times 4 = 48$

3.

- a. 24+6+2=30+2=32
- **b.** 73 60 + 5 = 13 + 5 = 18
- c. 4+4+50=8+50=58
- d. 89 + 2 12 = 91 12 = 79
- $e. 2+3\times5=2+15=17$
- f.  $24 \div 6 2 = 4 2 = 2$
- g.  $24 \div 3 2 = 8 2 = 6$
- h.  $7 + 12 \times 10 = 7 + 120 = 127$
- i. 25 15 + 2 = 10 + 2 = 12
- i. 10 + 80 20 = 90 20 = 70

4.	8	11
	$15 \div 5 + 4 + 1$	49-7×6+4
	$36 \div 9 + 4$	80 ÷ 10 + 6 - 3
	$12 - 72 \div 12 + 2$	
	16	28
	15-7+2+6	24-8÷4+6
	$99 - 10 \times 9 + 7$	$8 \times 2 + 24 - 12$
	32	Other
	$8 \times 3 + 6 + 2$	2+4×6
		48 ÷ 4 + 9
		$7 + 70 \div 10 - 2$
		$24 \times 36 \div 6 + 2$
		$40 - 7 \times 5 + 2$

5.

- a. 24-4=20
- **b.** 100 80 = 20
- c.(80-50=30)
- d. 20

б.

The first problem has no parentheses So , we divide , then add the second problem has parentheses

So, we add, then divide

$$8+6 \div 2 = 8+3=11$$

$$_{5}[8+6] \div 2 = 14 \div 2 = 7$$

$$74 - 61 + 8 \times 5 = 74 - 61 + 40$$
  
=  $13 + 40 = 53$ 

#### Sarah is correct

Saleem should follow the order multiply subtract sadd

- 8.
- a.  $320.5 \times 67 15$
- h  $614.568 + 78 8 \times 4$

# 9.

a. The share of each friend

$$= [246 - 25] \div 6 = 221 \div 6$$

= 36 stamps

and the remainder is 5 stamps

**b.** She walked =  $14 \times 14 + 56$ 

$$= 196 + 56$$

= 252 kilometers

c. Ashraf takes =  $(27 + 12) \times 5$ 

 $= 39 \times 5 = 195 \text{ minutes}$ 

d. The microbuses needed

$$= [172 + 8] \div 9 = 180 \div 9$$

= 20 microbuses

e. Number of muffins

$$= (198 - 17) \div 6 = 181 \div 6$$

= 30 muffins

and 1 berry is remainder

# 10.

Write by yourself.

# Answers of multiple choice questions

- 1. A
- 2. A
- 3. D
- A. A

- 5. C 9. A
- 6. D
- 7. B
- R. C 10. A 11. C 12. C
- 13. C
- 14. A

# Unit 8 Assessment

- 1. B
- 2 (
- 3 C

- 4. B 7. R
- 5. B
- 6 B

- 2.
- 1. 22 4. 5
- 2. 9 5. 1
- 3, 23

- 7. 2
- 8, 20
- 6. 2

- 3.
- 1. B
- 2 B 5. B
- 3. A 6. C

- 4. A 7. B
- 4.

1. a. 
$$11 + 10 - 1 = 21 - 1 = 20$$

- b. 40 + 25 = 65
- 2. a.  $6+20 \div 5=6+4=10$ 
  - b. 3+4=7
- 3. She walked =  $5 \times 7 \times 2 + 60$

$$= 35 \times 2 + 60$$

- = 70 + 60 = 130 km
- 4. Edward spends =  $[25 + 15] \times 5$ 
  - $=40 \times 5$
  - $= 200 \, \text{minutes}$

# Answers of Step by Step Revision



# **Cumulative Assessments**

# Unit 1

# **Cumulative Assessment**

1. a. D

c. C

h. D d. B

a. 0 2.

- **b.** 10.000
- c. Ten Millions
- d. 58
- e. 3,400,371,600
- f. 17.000.000.017
- 3. a. 5
- h. 9
- c. 8

- d. 6
- e. 2
- f. 0

# **Cumulative Assessment**

b. C

d. A

- a. B 2.
  - a. 34,905,421 **b.** 700.000.000
  - c. 5.000.000 + 600.000 + 10.000 +4.000 + 3

c. C

d. 450.000

# 3.

1.

# Composed: 618,204,375

Decomposed: [6 × 100.000.000]

- $+ (1 \times 10.000.000) + (8 \times 1.000.000)$
- $+(2 \times 100,000) + (4 \times 1,000)$
- $+ (3 \times 100) + (7 \times 10) + (5 \times 1)$

1	М	illio	ns	Tho	usa	nds		Ones	5
	Н	T	0	Н	Т	0	Н	T	0
	6	1	8	2	0	4	3	7	5

# **Cumulative Assessment**

- h. > c. < d. < 1. a. <
- 2. a. A b. D c. C d. A e. C f B
- 3. The number may be 35.782
- 4. The number may be 735,864,251
- 5. The number may be 6,006,009,800

# **Cumulative Assessment**



- b. D d. B 1. a. B c. B
- 2. a. 5,007,000
  - b. 6.402,000,028
  - c. 400.000.000
  - d. 5,000,000
- 3. a, 525,000,508 , 5,003,000,053 , 5,004,006,009 > 5,020,005,018
  - b. 9 millions and 3 hundred thousands . 5 millions . 770.322 , 500 thousands.

# **Cumulative Assessment**

a. 570,000 1.

> 575,000 574.698 570,000

580,000

**b.** 13.000

13.000 12,983 12.950 -12.900 -

- 2. a. 4.900
- b. 8,000,000
- c. 100,000,000 d. 54,320,000

- 3. a. A
- b. B
- C. A

- d. B
- e. C
- f. C
- 4. The numbers may be:
  - 784.531
- 784,521
- 784.496
- 784.476
- 784,450
- $[7 \times 1.000.000.000]$ 5.
  - $+[4 \times 100,000,000]$
  - $+ (5 \times 10.000.000)$
  - $+ [3 \times 1.000.000] + [3 \times 100.000]$
  - $+ [6 \times 10.000] + [1 \times 1.000]$
  - $+ [2 \times 100] + [1 \times 10] + [4 \times 1]$

# Unit 2

# **Cumulative Assessment**

- 1. a. A
- b. A E. C
- d. B

- a. 35
- b. 134 c. 9,463
- **d**. 0
- e. Hundred Thousands

- 3.
- a. 17+8+3=17+3+8

$$= [17 + 3] + 8$$

[associative property]

$$= 20 + 8 = 28$$

b. 35 + 14 + 15 + 36

$$= 35 + 15 + 14 + 36$$

[commutative property]

$$= [35 + 15] + [14 + 36]$$

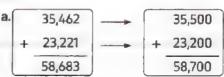
[associative property]

$$=50 + 50 = 100$$

- 4. a. 773,330
- b. 770,000

# **Cumulative Assessment**

- 1. a. A
- b. B
- c. B
- d. C



- b. 2,942 2.900 350 400 3,292 3,300
- C. 94,641 94,600 2,961 3,000 97,602 97,600

3.

142 + 55 + 18 + 45 = 142 + 18 + 55 + 45 (commutative property)

[associative property]

$$= 160 + 100 = 260$$

4.

#### Estimate:

3,573 + 4,230 = 3,600 + 4,200 = 7,800

Exact: 3,573 + 4,230 = 7,803

# 5. The order is:

- Three milliard, five hundred million, fourteen.
- 3 milliards ,50 millions ,40
- 3,000,000,000 + 20,000,000 + 400
- 3,000,786,562

# **Cumulative Assessment**

8

1.

a.

$$\begin{array}{c|cccc}
 & 7,356 \\
 & 2,547 \\
\hline
 & 4,809
\end{array}$$

$$\begin{array}{c|cccc}
 & 7,360 \\
 & 2,550 \\
\hline
 & 4,810
\end{array}$$

b.

- 2. a. 355
- b. 4.065
- c. 1,564

- d. 73.911
- e. 6,389
- f. 27,532

c. A

3. a. B

d. C

- b. C
- e. D

4.

The difference = 3,267 - 2,879= 388 toys

# **Cumulative Assessment**

9

- **1.** a. 873
- **b.** 3,467,219
- c. 67,125
- d. Ten Thousands

23,402

2.

- a. C
- b. B
- c. B
- d. C

3.

a. Bar model : 5

Solution: s = 74,252 + 23,402 = 97.654

b. Barmodel: 21,253 b 4,261

Solution: b = 21,253 - 4,261 = 16,992

c. Bar model : 47,261 m 31,422

Solution: m = 47,261 - 31,422 = 15,839 d. Bar model:

Solution: k = 52,428 - 45,261 = 7,167

4.

Let the number of female be m

Solution: m = 74,319 - 32,425 = 41,894

5.

[associative property]

= 740 + 170 = 910

**Cumulative Assessment** 

10

1.

- a. 46.856
- b. 4,000,000,000
- **c.** 2,000,000,000 + 700,000,000 + 80,000,000 + 5,000,000 + 600,000 + 20,000 + 9,000 + 100 + 40 + 2
- d. (15+5)+7 [associative property] = 20+7=27
- e. 44,709
- f. 65

78

2.

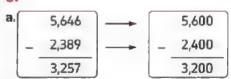
a. C b.

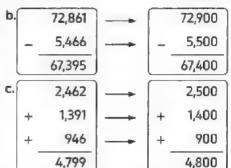
b. C

c. B

d. D

3.





4.

- Population of South Sinal and North Sinal = 111,835 + 450,528 = 562,363
- Population of Port Said more than them by = 782,180 - 562,363
   = 219.817

- The library sold = 5,325 + 9,712 = 15.037 books
- The left = 20,000 15,037 = 4,963 books

# Unit 3

# **Cumulative Assessment**

# #

- 1. a. 7 , 83
- 101

- **c**. 25,423
- **b**. 7 , 486
- 2. a. 7.000
- **b**. 7,800,000
- **c**. 7,050
- d. 8 <sub>762</sub>
- **e**. 13
- f. 110

3. a. C

4.

b. B

c. A

d. C

- e. C
- a. 4,429
- **b**. 67,453
- c. 2,574

# **Cumulative Assessment**

12

- 1. a.7 , 6
- **b**. 8 , 875
- c. 2,034,789
- d. 38,000
- e. 7,004
- f. 2.000.000

2. a. B

b. C

c. A

d. D

- e. C
- 3. a. 8 , 782
- b. 29 , 419
- c. 52,034
- 4. 21,000 g , 23,000 g , 25 kg
  - , 2 ton
- 5. The car covers =  $2 \times 8 = 16 \text{ km}$ 
  - = 16,000 m

# **Cumulative Assessment**

43

- 1.
- a. 3 450
- b. 74 , 82
- c. 7.015
- **d**. 25
- e. 3 , 729
- 2. a. B

- b. C
- c. A
- d. B

- e. C
- 3. Petrol was used
  - = 25 L,400 mL-10 L,230 mL
  - = 15 L , 170 mL
- 4. 18 + 35 + 82 + 15
  - = 18 + 82 + 35 + 15 (Commutative)
    - = (18 + 82) + (35 + 15) [Associative]
    - = 100 + 50 = 150
- 5. There are many numbers , for example :
  - 341,234
- 335,216
- 342,167
- 336,247

# **Cumulative Assessment**

- 14
- 1. a. 5:15 15 past 5
  - b. 1:50
- 10 to 2
- c. 9:25
  - 25 past 9
- d. 7:10
- 10 past 7
- b. 14 650
- c. 200

- 2. a. 544 d. 25
- e. 7,23
- f. 35

g. 9,8

#### Answers

- 3. a. B
- b D
- c. C

- d D
- ο Δ

#### 15 **Cumulative Assessment**

- 1. a. A
- b.C

- d. B
- e. A
- c. A
- 2. The length of the left cloth
  - $= 5 \text{ m} \cdot 50 \text{ cm} 2 \text{ m} \cdot 25 \text{ cm}$
  - $= (5-2) \text{ m} \cdot (50-25) \text{ cm}$
  - = 3 m . 25 cm
- The total = 3.
  - 43 kg , 450 g + 34 kg , 900 g
  - = [43 + 34] ka + [450 + 900] a
  - = 77 kg, 1.350 g = 78 kg, 350 g
- 4. a. 160
- **b**. 1.820
- c. 1.083

c. D

- d. 780
- e. 120
- 5. a. 10:10 , 10 past 10 **b.** 11:15 , 15 past 11

# **Cumulative Assessment**

- 1. a. 0 b. C
  - d. B
- e. A
- 2. a. 78.460
- b. 9 , 250
- c. 12
- d. 2,020
- 3.  $25.000 \, \text{mL} = 25 \, \text{liters}$ The tank needed = 70 - 25
  - = 45 liters
- 4. He will study in 6 days =  $30 \times 6$ = 180 minutes = 3 hours

5. The ant will walk =  $5 \times 20$ = 100 km = 100.000 m

# Unit 4

# **Cumulative Assessment**

- a. 6:05 1.
- h. 40
- c. 280

- d. 5.034
- e. 39 additive identity
- f. 350
- a. C 2.
- h C ο Δ
- c. A
- d C
- 3. a. First formula:
  - P = 7 + 4 + 7 + 4 = 22 m
  - Second formula:

$$P = [2 \times 7] + [2 \times 4] = 14 + 8$$
  
= 22 m

b. First formula :

$$P = 40 + 40 + 40 + 40$$

 $= 160 \, \text{mm}$ 

Second formula:

$$P = 40 \times 4 = 160 \, \text{mm}$$

- $P = 2 \times (L + W) = 2 \times (42 + 28)$ 4
  - $= 2 \times 70 = 140 \text{ mm}$

# **Cumulative Assessment**

- 1. a. C
- b. D
- c. B
- d. A e. C
- 2. a. 75.151
- **b**. 21.380
- c. 3.003

- d. 570
- e. 73
- f. 700

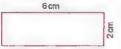
- a.  $A = 24 \text{ cm}^2$  P = 20 cm 3.

  - $h. A = 2.500 \, \text{m}^2$ 
    - $P = 200 \, \text{m}$
  - $r \Delta = 84 \, \text{km}^2$ 
    - P = 38 km
- 4. The answers may vary



 $P = 2 \times [3 + 4] = 2 \times 7 = 14 \text{ cm}$ 

h.



 $P = 2 \times (6 + 2) = 2 \times 8 = 16 \text{ cm}$ 

# **Cumulative Assessment**

- 1. a. 36 cm<sup>2</sup>
- b. 5 cm
- c. 4 m

- d. 10:07
- e. 38,000
- 2. a. A
- h. B c. B
- d. A
- e. C
- a. 1:50 10 to 2 3.
  - b. 3:30
- half past 3
- c. 5:40
- 20 to 6
- d. 9:10 10 past 9
- P=20 cm , L=6 cm 4.
  - $W = [P \div 2] L = [20 \div 2] 6$ 
    - = 10 6 = 4 cm
  - $A = L \times W = 6 \times 4 = 24 \text{ cm}^2$

5. 2,000 grams = 2 kilograms The number of days =  $10 \pm 2$ = 5 days

# **Cumulative Assessment**

- a. 44
- b. 135
- c. 7
- d. 5.000,000 e. 7,5
- f. 0
- a. C 2.
- h.C
- c. B
- d. D
- a. 457 3.
- b. 207
- The side length of the playground 4.
  - $= 20 \div 4 = 5 \text{ m}$

The area of the playground

 $=5 \times 5 = 25 \,\mathrm{m}^2$ 

# Unit 5

# **Cumulative Assessment**

- a. B
- b. D
- c. C
- d. A
- e. D
- a. 3 2.
- b. 54 26
- c. 96
- $d. 4 \times 10 = 40$
- e. 0
- a.  $A = 36 \text{ cm}^2$   $\Rightarrow P = 24 \text{ cm}$ 
  - b.  $A = 36 \text{ cm}^2 + P = 30 \text{ cm}$

4. a. 64 is 8 times the number 8b. 36 = 9 × 6

# **Cumulative Assessment**

22

- 1. a. Equation:  $n = 6 \times 5$ 
  - Answer: n = 30
  - **b.** Equation:  $40 = 5 \times a$ 
    - Answer:  $a = 40 \div 5 = 8$
  - c. Equation:  $70 = m \times 10$ Answer:  $m = 70 \div 10 = 7$
- 2. a, n = 16
  - b.  $k = 49 \div 7 = 7$
  - c.  $b = 72 \div 9 = 8$
- 3. a. B b. A
- 4. a. 4 b. 36
  - a. + u. o
  - c. 5 d. Ten Thousands

c. C

e. 3,000

# **Cumulative Assessment**



d. D

- 1. a. 5
- **b.** 6.000
- c. 3,155
- d. 0
- e. 65
- f. 18
- 2. a. D
- b. A c
- c. D
- 3. a. >
- b. <
- c. =
- d. =

d. A

4.  $4 \times 9 = 9 \times 4 = 36$  (Ways may vary)

5. Hany paid =  $4 \times 3,000$ = 12,000 pounds

# **Cumulative Assessment**

24

- 1. a.  $4 \times 9 = 36$
- **b.**  $6 \times 10 = 60$
- c.  $8 \times 7 = 56$
- d.  $90 \times 3 = 270$
- e.  $40 \times 5 = 200$
- $f. 8 \times 60 = 480$
- 2. a. 27
- **b.** 7:45
- **c.** 180
- **d**. 8
- e. 8
- f. 5
- 3. **a.**  $8 \times (3 \times 100) = (8 \times 3) \times 100$ =  $24 \times 100 = 2.400$ 
  - b.  $5 \times (7 \times 1,000) = (5 \times 7) \times 1,000$ =  $35 \times 1,000$ = 35.000
  - Ayman has =  $5 \times 8 \times 6$ =  $[5 \times 8] \times 6 = 40 \times 6$ = 240 pencils
- 5. a. A
- b. B
- c. B

- d. C
- e. D

# Unia a

# **Cumulative Assessment**

125

- 1. a. B
- b. A
- c. D

- d. C
- e. A

- 2. a.1,2,3,6
- h 2
- c. 76.000
- d. 80,000,000
- e. 8.008
- f. 78 . 9
- a. 4
- 3.
- a. The factors are: 1,2,4,8,16,32
- b. The factors are: 1,23
- c. The numbers are: 23, 29, 31, 37
- **d.** The numbers are: 51,52,54,55,56,57,58,60,62,63,64

# **Cumulative Assessment**

26

- 1. a. 1,2,4
- b. 1,2,3,6

- **c**. 1
- a. 2 b. 2,400
- c. 40 .7 .280
- d. 5
- e. 3,300
- 3. a. A

2.

- b. C
- c. D

- d. A
- e. C

# 4.

- Factors of 48:1,2,3,4,6,8,12,16,24,48
- Factors of 40:1,2,4,5,8,10,20,40
- Common factors: 1,2,4,8
- GCF:8
- The greatest number of packs is 8 pack of 6 pens and 5 pencils in each pack

# **Cumulative Assessment**

27

1. a. 0

b. 2

c. C

- c. 50,341,143
- d. 5.302

- e. 2
- 2. a. D
- b. A
- d. B
- 3. a. 0 · 3 · 6 · 9 · 12 · 15 · 18 · 21 · 24 · 27 · 30
  - b. 1,2,3,4,6,9,12,18,36
  - c. 10,20 (Answers may vary)
- 4. 5,10,15,20,25,30 He will go six times.

# **Cumulative Assessment**

28

- 1. a. 5,15
  - b. 2,6,12 (Answers may vary)
  - c. 20
- d. 280
- e. 27

- 2. a. B
- b. C
- c. A

- d. B
- e. D
- 3. a. 30
- b. 6 or 9

- 4.
- a. 5 is a factor of 10
  - 10 is a multiple of 2
  - (Answers may vary)
- b. 12 is a multiple of 4
  - 30 is a multiple of 6
  - (Answers may vary)

# Unit 7

# **Cumulative Assessment**

- 1. a. 90 5
- b. 20 -160
- c. 8
- d. 1,000 ,700 ,30
- e. 3,004.005.006
- 2. a. B
- h. A
- c. A

- d. D
- e. C

- 3.
- a. 73 = 70 + 3
  - 70

3

- $5 \times 70 = 350$
- $5 \times 3 = 15$
- $5 \times 73 = 350 + 15 = 365$
- b.  $61 \times 9 = [60 + 1] \times 9$ 
  - $= [60 \times 9] + [1 \times 9]$
  - = 540 + 9 = 549
- 4.

Mohamed has  $= 7 \times 45$ 

- $= 7 \times [40 + 5]$
- $= (7 \times 40) + (7 \times 5)$
- $= 280 \pm 35$
- = 315 candies

# **Cumulative Assessment**

30

- 1. a. D
- **b.** B
- c. C

- d. D
- e. A

- a. 50,000 b. 36 2.
- c. 14

- d. 8.960
- e. 7.000
- f. 550

4

Я

- 3.
- a.
- 78 9 × 72
- b. 642
  - ×
- 630 702
- 160 4 2,400 + 2,568
- 4. a. 74
- h. 22
- 5. The mass of 7 boxes =  $131 \times 7$ 
  - $= 917 \, \text{kg}$

# **Cumulative Assessment**

- 1. a. B
- b. B
- c. D

- d. A
- e. B
- 2. a. 1.320
- b. 3.958
- c. commutative
- d. 96

e. 34

- f. 250
- 3. a. 4 m
- b. 7 cm

- 4.
- a. Dina paid =  $25 \times 30 = 750$  pounds
- b. 37,661 , 37,908 , 38,042

[Answers may vary]

# **Cumulative Assessment**

- a. 5 1.
- h. Millions E. 6
- d. 1 23
- e. 6
- f. 7

- 2. a. C
- h. C
- c. C f. C.

- d. A
- e. C
- b. 7R6
- d. 9R1

a. 5R4

- e. 6R3
- c. 9R4 f. 9R0

4.

3.

#### $64 \div 3 = 21 R1$

He can give each son 21 pounds and the remainder is 1 pound.

# **Cumulative Assessment**

- 1. a. 200
- b. 1,000 e. 112
- c. 6.000

d. 12,2

f. 11

c. B

£ C

- **a.** 500
- h. 7.280
- a. A d. B
- b. D e. A

# 3.

2.

The number of tourists =  $320 \div 8$ = 40 tourists

The length =  $15 \div 3 = 5$  meters

# 5.

a. Area =  $40 \, \text{m}^2$ 

Perimeter = 28 m

b. Area =  $49 \, \text{cm}^2$ 

Perimeter = 28 cm

# **Cumulative Assessment**



- 1. a. A
- b. B c. D

- d. B
- e. B
- a. Two milliard three hundred 2. million , thirty thousand , three
  - b. 0

- c. 7
- d.  $7 \times 5 = 35$
- e. 3

# 3.

a.  $84 \pm 3$ 

$$3 \times 20 = 60 \quad 3 \times 8 = 24$$
 $20 \quad 8$ 

$$60 + 24 = 84 R O$$

So 
$$94 \div 3 = 20 + 8 = 28$$

**b.**  $216 \div 6$ 

$$6 6 \times 30 = 180 6 \times 6 = 36$$

So 
$$\Rightarrow$$
 216  $\div$  6 = 30 + 6 = 36

- 4. a. 26
- b. 190
- c. 1,245
- d. 131

# **Cumulative Assessment**

- a. 162 1.
- b. 167 > 6
- c. 98 , 80

- d. 0
- e. 21
- 2. a. C
- b. B
- c. A

- d. A
- e. D

3.

$$S_{0}, 89 \div 3 = 20 + 9 R 2 = 29 R 2$$

So 
$$.628 \div 4 = 100 + 50 + 7 = 157$$

# c. 2,374 ÷ 6

So 
$$,2,374 \div 6 = 300 + 90 + 5 R4$$
  
= 395 R4

a.	835	<del>-</del> 5
		167
	5	835
	_	5
	•	33
	-	30
	•	35
	_	35
		0

	0 608	R2
7	4,258	
-	42	
	05	1
_	0	
	58	
_	56	
	2	1

	0740
9	6,660
-	63
	36
	36
	0

# **Cumulative Assessment**

36

- 1. a. B
- b. C
- c. A

- d. C
- e. C
- 2. a.  $1.686 \div 6 = 281$  b.  $307 \cdot 1$ 
  - c. 92
- d. 300 <sub>3</sub>60 <sub>3</sub>2
- e. 641
- f. 300.000.000
- 3. The share of each one = 358 ÷ 2 = 179 L.E.
- 4.
- **a.**  $[2,526] \div [6] = [421]$
- **b.**  $\boxed{764 \div 2} = \boxed{382}$
- c.  $[5,216] \div [8] = [652]$
- **d.**  $[2,312] \div [4] = [578]$

# Unit 8

# **Cumulative Assessment**

37

- 1. a. 13
- b. 29
- **c.** 145

- d. 900 R 2
- e. 219,353
  - f. 10

- 2. a. 6
- **b**. 96
- **c**. 13
- d. 1,960
- e. 5,008,040
- f. 4,400
- 3. a. C d. D
- b. A e. A
- c. B f. B
- 4. The number of microbuses
  - $= (330 154) \div 8 = 176 \div 8$
  - = 22 microbuses

# **Monthly Tests**

# Tests of October

# Test 1

1. 1. D

2.

2. D

3. C

- 4. B 5. D
- **1.** 60,000,000 **3.** 7.007.314
- **2.** 621 **4.** 35
- 5, 740,000
- 3. a. The difference = 519,800 - 112,200 = 407,600 people
  - b. 12 + 30 + 28 + 20 = 12 + 28 + 30 + 20 (Commutative)
    - = (12 + 28) + (30 + 20)[Associative] = 40 + 50 = 90

# Test

- 1. 1. 45,068
- 2. 3,137,619,088
- 3. 9,000
- 4. Millions
- 5, 6,000
- 2. 1. C
- 2. D
- 3. A

- 4. C
- 5. B
- 3. a.

Hours		Minutes
30	*	65,05
- 7	:	50
2	:	15

- The time of the game is 2 hours and 15 minutes.
- **b.** The number of ants in the two bridges = 142 + 165 = 307 ants

# Test 3

- 1. 1. C 2. D
  - 4. C 5. C
- 2. 1. 84
- 2. 6,150

3. C

- 3. Millions 4. 50,345,730
- 5. 8
- 3. a. Sameh paid
  - = 500.000 251.650
  - = 248,350 pounds
  - b. The order is: 4,273,653,
    - 4,237,690 , 4,237,651 , 495,627

# Tests of November

# Test 1

- 1. 1.C 2.D
  - 4. C

2.

- 5. B
- 1. 5×8 = 40
  - 2 3
    - 2. 3

3. B

**3**. 5

- 4. 2 5. 5
- 3. a. The total =

kg g

- 3 400
- + 5 217
  - 8 kg and 617 g

- b. Factors of 40 : 40 50 1,2,4,5,8 1 50 40 ,10,20,40 2 20 2 25 Factors of 50: 5 10 10 5 8
  - 1,2,5,10

Common factors: 1,2,5,10

G.C.F: 10

# Test 2

- 1. 1. B
- 2. C
- 3. B

- 4. A
- **5.** C **2.** 16
- 2. 1. 5

4. 1.500

- 3. 1,2,5,10
  - 5. 2×L+2×W
- 3. a. The length of the border = 30 × 4 = 120 cm
  - **b.** Factors of 18:1,2,3,6,9,18

Factors of 6:1,2,3,6

Common factors:1,2,3,6

G.C.F : 6

# Test 3

- **1. 1.** B
- 2. D 5. C
- 3. B

- 2. 1. 8
- 2. 1.000
- 3, 15

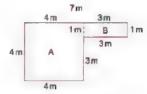
4. D

- 4.6
- 5. 40
- 3. a.  $2 \times 3 \times 5 = 2 \times 5 \times 3$

$$= [2 \times 5] \times 3$$

$$=10\times3$$

b.



Area of the square A

$$= 4 \times 4 = 16 \,\mathrm{m}^2$$

Area of the rectangle B

$$=3 \times 1 = 3 \text{ m}^2$$

Area of the complex figure

$$= 16 + 3 = 19 \text{ m}^2$$

Perimeter of the complex

figure = 
$$7+1+3+3+4+4$$

 $= 22 \, \mathrm{m}$ 

# General Revision

# Unit 1

#### 1.

- 1. 164,000,000
- 2. 3.214.936

3, 409

- 4, 60,000,000
- 5. 60.000.000
- 6, 8,000,000
- 7. Millions
- 8. Millions
- 9. Millions
- 10. 400
- 11, 30,000
- 12. 7.000.000
- **13**. 33.000
- 14. 1.035.689
- **15.** 3.008.433
- 16. Three milliard a five hundred one million , seven hundred two thousand, nine hundred three.
- **17.** 70.070.070
- 18.8
- 19. 503.270

# 2.

- 1. B 5. A
- 2. B

6. C

18. A

22. C

- 3. C
- 4. C B. A

- 9. B 10. C
- 7. A
- 11. C
- 12. B

- 13. D
- 14. B 15. D
- 16. A 20. B

- 17. A 21. C

- 19. C 23. A

# 3.

- 1. 9 millions > 5 millions and 7 hundred thousands , 900 thousands ,500,223
- 2. 179,462,490 (Answers may vary)

- 9.208.111
- 4. 988.423 1.282.756 3.012.427 -3.105.338
- 5. 2.000,000,000 + 400,000,000
  - +40.000.000 +5.000.000 +200.000
    - +30.000 + 2.000 + 100 + 90 + 7
- 6. a. 556,500
- b. 600,000
- 7.  $(3 \times 1.000.000) + [1 \times 100.000]$ 
  - $+ [6 \times 10.000] + [6 \times 1.000]$
  - $+[2 \times 100] + [5 \times 10] + 2$
- 8. a.5
- **b**. 1
- c. 3

# Unit 2

# 1.

- 1. 1.000
- 2. 0
- 3, 7,000
- 4. 1.000
- 5. 520
- 6. 5.000
- 7. 6.885
- 8, 88,223
- 9, 3,310
- 10, 102
- 11, 10,901
- 13. 854
- 12, 2,000
- 15. 5.242
- 14. 5.168 16, 6,848

**17.** 35

18, 48

- 1. A 2. D
- 3. B
- 4. C

- 5. C
- 9. D
- 6. B 10. C
- 7. A 11. A
- 8. A 12. D

- 13. C 17. C
- 14. B 18. C
- 15. C
- 16. C

# 3.

- 1. Mohamed paid = 668,500 342,650 = 325.850 pounds
- 2. The number of ants = 142 + 165 = 307 ants
- 3. The remaining distance = 675 239= 436 km
- 4. The total = 1,653,465 + 3,312,447 = 4,965,912 people
- **5.** He paid = 7,250 + 4,000 = 11,250 L.E.
- 6. The difference = 517,901 112,211 = 405,690 people
- 7. G = 930 710 = 220
- 8. Bar model 35,462 2,741

  Solution = 35,462 + 2,741 = 38,203
- 9. K = 349 226 = 123

# Unit 3

# 1.

- 1. 35,086
- **2**. 30
- 3. 6,000 E 4.200
- 4. 9,000,000
- **5.** 4,300
- **6.** 5,005 **8.** 2,000

7. 48 9. 9

- 10, 65
- 11. 35.086
- 12. 32.077
- 13. 9
- 14. 10.000
- **15.** 260
- 16. 845
- **17.** 9 , 250
- 18. 9

- **19**. 5.275
- 20.8
- **21**. 3,258
- 22. 10:07

**23**. 35

- **24**. 635
- 25. 900
- 26, 35

- 2.
- 1. B
- **2**. C
- 3. C
- 4. C

- 5. C
- 6. A
- 7. A
- 8. B 12. C

- 9. D 13. D
- 10. C
- 11. D

19. D

16. B 20. C

- 17. C
- 18. D
  - .
- 23. D 24. D

- 25. B
- 3.
- 1. 8 mm , 8 m , 8.000 cm , 8 km
- 2. Number of hours = 3 × 24 = 72 hours
- 3. Number of minutes =  $8 \times 60$ 
  - = 480 minutes
- 4. Number of minutes =  $5 \times 30$ 
  - = 150 minutes
- 5. The distance =  $2 \times 10 = 20 \text{ km}$ = 20.000 m
- 6. It will end at 5:45 P.M.
- 7. It needed = 50 20 = 30 liters

# CUnit 4

- 1.
- 1. 21

2. 20

**3**, 20

#### Answers

5. 16

6.7

7. 21

8 24

9. 12

10. 20

11, 32

- 12, 35
- 13. (L+W) × 2
- 15. itself
- 14, 12

16.5×4

17. 36

- 18. 4
- 19. length
- 20. 9 cm<sup>2</sup>

# 2.

- 1. C
- 2. D
- 3. A
- 4. A 8. D

- 5. C 9. B
- 6. C 10. B

18. C

- 7. D 11. A
- 12. D

16. C

13 C

17. B

- 14. B 15. D
  - 19. B

- 3.
- 1. The perimeter =  $(7+4) \times 2 = 22$  meters
- 2. The area =  $8 \times 8 = 64 \text{ cm}^2$
- 3. The area =  $4 \times 4 = 16$  square meters
- 4. The perimeter =  $2 \times (5 + 3) = 2 \times 8$  $= 16 \, cm$
- 5. The perimeter =  $2 \times [16 + 14]$  $= 2 \times 30 = 60 \text{ cm}$
- 6. Area of the garden =  $6 \times 6 = 36 \text{ m}^2$
- $7. A = 84 cm^2$ 
  - $P = 46 \, cm$
- 8. a. Perimeter =  $2 \times 6 + 2 \times 4$ = 12 + 8 = 20 cm
  - b. Perimeter =  $5 \times 4 = 20$  cm
- 9. a. Perimeter =  $7 \times 4 = 28$  cm
  - **b.** Area =  $7 \times 7 = 49 \text{ cm}^2$

# ←Unit 5

- 1.
- 1. 3.500
- 2. 3

- 3. 6
  - 4, 1,800
- 5. zero 7, 1,500
- 6. 70 pounds 8. 7
- 9, 600
- 10. 3
- 11. 25 13. 4
- 12. 45 × 12 14. 2.100

15, 50

1 D

5. C

- 2.
- 2. D 6. A
- 3. A 7. B
- 4. A 8. B
- 9. B 10. B
- 11. A
  - 12. D 16. D
- 13. A 14. C 17. B
- 15. A
- 18. B
- 19. C 20. A 24. B
- 21 A 22 A 26. C 25. D
- 23 A
- 27. C 28. D

- 3.
- 1. The total =  $5.000 \times 9$ 
  - = 45,000 meters = 45 kilometers
- 2. Mariam paid =  $4 \times 1,000$ = 4,000 pounds
- 3. The price of all pens =  $10 \times 200$ = 2,000 piasters
- 4. Ali travelled =  $3.000 \times 8 = 24.000 \text{ m}$  $= 24 \,\mathrm{km}$
- 5. His brother ate  $= 4 \times 3 = 12$  figs
- 6. Hanv gains =  $30 \times 8 = 240 LE$ .

# Unit 6

- 1.
- 1. 2

**2**. 2

3. 2

4.7

5. 1

6 27

7. 2

8.0

9.3

- 10, 5,10,15
- 11. 6 or 12 (answer may vary)
- 12. 6

**13**. 2

14. 8 14. 10

- **15**. 24
- ....
- 17. 36 , 4 , 9
- **18**. 3 , 5
- 19. 21 , 21

- 20. 9
- **21**. 1 , 2 , 3 , 4 , 6 and 12

2 C

# 2.

1. A

- 3. B
- 4. D
- 5. C 6. C

- **8.** B
- 9. C 10. B
- 11. B
- 12. C

- 13. C 14. C
- 15. C
- 16. D

24. A

- 17. A 18. A
- 19. D 23. D
  - 20. D
- 21. B 22. A
- 25. C 26. D
- \_\_\_\_\_

# 3.

1. Factors of 25 are 1,5,25
Factors of 35 are 1,5,7,35
Common factors are 1,5
G.C.F = 5

- 2. Factors of 24 are 1, 2, 3, 4, 6, 8, 12, 24
  - 24 is a composite number.
- 3. Factors of 12 are 1 · 2 · 3 · 4 · 6 · 12

  Factors of 18 are 1 · 2 · 3 · 6 · 9 · 18

Common factors are 1, 2, 3, 6

- G,C,F=6
- 4. Factors of 14 are 1, 2, 7, 14

Factors of 21 are 1, 3, 7, 21

Common factors are 1,7

G.C.F = 7

5. Factors of 16 are 1, 2, 4, 8, 16

Factors of 24 are 1, 2, 3, 4, 6, 8,

12,24

Common factors are 1, 2, 4, 8

G.C.F = 8

6. Factors of 20 are 1, 2, 4, 5, 10, 20

Factors of 15 are 1,3,5,15

Common factors are 1,5

G.C.F = 5

7. Factors of 30 are 1, 2, 3, 5, 6, 10, 15, 30

15 , 30

Factors of 45 are 1, 3, 5, 9, 15, 45

Common factors are 1,3,5,15

G.C.F = 15

- **8**. 28
- 9. Multiples of 9 are 9,18,27,36 [Answer may vary]

# Unit-7

- 1.
- 1. 12,615
- 2. 64

3. 121

- 4, 107
- 5. 389

6.1,1

7. 7

- 8. 60
- **9**. 1,000
- 10. 3
- 11. 304
- 12. 110
- 13, 641
- 14. 5 -1
- **15**. 102
- 16. 48

**17.** 10

18. 6

19. 101

- **20**. 653
- 21. 517

**22**. 632

# 2.

- 1. C
- 2. C
- 3. C
- 4. C

- 5. B 9. C
- 6. C 10. C
- 7. A
- 8. B 12. C

- 13. B
- 14. B
- 11. C
- 16. B

- 17. C
- 18. A
- 19. A
- **20**. C

- **21**. B
- 22. B 23. B
- 24. B

**25**. A

# 3.

- 1. The mass =  $124 \times 5 = 620 \text{ kg}$
- 2. Number of kilometers
  - $=58 \times 9$
- 50
- 8

- = 450 + 72= 522 km
- 50 × 9 9 × 8 = 450 = 72
- 3. Number of days  $= 545 \div 5$ = 109 days

- 4. Number of teams = 72 ÷ 9 = 8 teams
- 5. The number of sweet pieces = 15 × 7 = 105 sweet pieces
- 6.  $246 \div 6 = 41$
- 7. The share of each one  $= 84 \div 7 = 12$  stickers

# Unit 8

- 1.
- 1. 13
- 2. 6
- 3, 21 6, 8

- 4. 9 7. 2
- 5. 13 8. 4
- 9. 20

- 10. 18 13. 10
- 11. 20 14. 8
- 12. 3 15. 11

- 2. 1. C
- 2. A
- 3. C
- 4. B

- 5. D 9. A
- 6. C
- 7. A 11. C
- 12. A

13. A

17. B

- 14. A
- 15. A
- 16. B

- 3.
- 1.  $7 + 12 \times [4 + 6] = 7 + 12 \times 10 = 7 + 120$ = 127
- 2.  $16 \div 4 2 = 4 2 = 2$
- 3.  $25 3 \times 5 + 2 = 25 15 + 2 = 10 + 2$ = 12
- 4. He walked =  $(5 \times 7) \times 3 + 50$ =  $35 \times 3 + 50 = 105 + 50$ = 155 km

# **Directorates Exams**

#### 1 Cairo

1.

5 D

- 1 D 2 D

  - 6. D
- 3 D 7. D

2, 22,237

- 2.
- 1. 10.234.567
- 5, 27 4.9 8, 20 cm
- 7. 5
- 3.

5. C

- 1. D 2. D

  - 6. C
- 3. D 7. C

- 4.
- 1.  $246 \div 6 = 41$
- 2. Ali paid = 7.250 + 4.000 = 11.250 L.E.
- 3.  $7 + 12 \times [4 + 6] = 7 + 12 \times 10$ = 7 + 120 = 127
- 4. The multiples of 3 are: 0,3,6,9, 12, 15, 18, 21, 24, 27, 30

# 2 Cairo

- 1.
- 1. A 2. B
  - 5. C
- 4. B 7. C
- 2.
- 1. 641 4. 2,000

7. 61

- 2. 6
- **5**. 5.650
- 8.1,2,3,6,9,18

3. C

6. C

3. 28

6. 20

- 3. 1. A
- 2. A
- 3. C

- 4. C
- 5. D
- 6. B

- 7. C
- 4.

4 (

3, 10

6.1

4. D

- 1. The share of each one
  - $= 2.532 \div 3 = 844$  pounds.
- 2. The order is: 654.311 654.310 -654,301 ,604,320 ,599,310
- 3. Factors of 16:1,2,4,8,16

Factors of 20:1,2,4,5,10,20

common factors: 1,2,4

G.C.F:4

- 4.36 + 80 + 64 + 20 = 36 + 64 + 80 + 20[Commutative property]
  - = (36 + 64) + (80 + 20)(Associative property)
  - =100 + 100 = 200

# 3

# Giza

- 1.
- 1. A
- 2. D
- 3. C

- 4. B
- 5. C
- 6. C

- 7. D
- 2.
- 1. zero
- 2. 6
- 3. 14

- 4, 400
- 5. 7.500
- **6.** 7.000

- 7, 100
- 8.15

3.

- 1. C
- 2. D
- 3. A

- 4. D
- 5. C
- 6. A

- 7. A
- 4.
- 1. Factors of 10:1,2,5,10
  Factors of 25:1,5,25
  Common factors:1,5
  G.C.F:5
- 2. What the ant walks  $= 50 \times 10 = 500$  kilometers
- 3.14,221
- 4. The number of groups =  $250 \div 5$ = 50 groups

4	Giza	
1.		
1. A	2. C	<b>3.</b> D
4. B	5. A	6. B
<b>7.</b> C		
2.		
1. 1,000	<b>2</b> . 457,000	,000
3. 2	4. 8	
<b>5</b> . 8,014,936	<b>6.</b> 1	
<b>7</b> . 2,000	8. zero	
3.		
1. B	<b>2.</b> C	<b>3</b> . B
4. B	<b>5</b> . B	<b>6.</b> B
7. B		

- 4.
- 1. Factors of 20:1,2,4,5,10,20 Factors of 30:1,2,3,5,6,10,15,30
  - Common factors: 1,2,5,10
  - G.C.F:10
- $2.2 \times 6 \times 5 = 2 \times 5 \times 6$ 
  - [Commutative property]
  - $= (2 \times 5) \times 6$  (Associative property)
  - $= 10 \times 6 = 60$
- 3. Mohamed paid = 500 342 = 158 pounds
- $4.70 \times 22 = 1,540$

# 5 Alexandria

- 1. 1. C
- 2. B
- 3. B

- 4. C
- 5. D
- 6. A

- **7.** C
- 2.
- 1. zero
- 2. 7,000
- $3.5 \times 9 = 45$

- **4.** 2,511 **7.** 20.467
- 5. 2R1 8. 2
- 6, 2

- 3.
- \_
- 1. 0
- **2**. B
- 3. A

- 4. B
- **5**. D
- 6. B

- 7. D
- 4.
- 1. The perimeter = 5+2+2+3+3+5= 20 cm

The area =  $3 \times 3 + 2 \times 5 = 9 + 10$ 

- $= 19 \text{ cm}^2$
- $2.4 \times 5 12 \div 3 = 20 4 = 16$

A.F

A D

9 R

12 D

3. 6 - 350

6. 2

 $3.24 \times 13 = 312$ 

	20	4
10	200	40
3	60	12

- $24 \times 13 = 200 + 40 + 60 + 12 = 312$
- 4. Factors of 12:1, 2, 3, 4, 6, 17 Factors of 18: 1, 2, 3, 6, 9, 18

The common factors: 1,2,3,6

G.C.E.=6

#### 6 El-Kalyoubia

- 1.
- 1 0 2. A
  - 3. B 5 D 6 C
- 4. A 7. A
- 2.
- 1.3 60
- $2.20 = 4 \times 5$
- 251 347
- 47
- 5.19 6, 20
- 7. 2.420 8.180

- 3.
- 1. B
- 2. D
- 3. B
- 4. D 5. B
- 6. A

- 7. C
- 4.
- 1. He will save =  $145 \times 5 = 725$  pounds
- 2.  $A = [20 \div 2] 3 = 10 3 = 7 \text{ cm}$ .
- 3. The number of tourists. = 7.000 - 3.000 = 4.000 tourists
- 4. The number of glasses in each box  $= 424 \div 4 = 106$  glasses.

- El-Sharkia
- 1. A
- 2. A
- 5. A
- 7. D 8. B
- 10 D

4. B

- 11. B
- 13. B
- 2.
- 1. 2
- 2. 3

8. 5.400

14. B

- 4. zero 5, 6,454
- 7. 25 cm<sup>2</sup>
- 3.
- $1.243 \times 4 = 972$
- $2.108 \div 3 = 36$
- 3. Factors of 24:1,2,3,4,6,8,12,24

Factors of 18:1,2,3,6,9,18

Common factors: 1,2,3,6

G.C.F: 6

- 4.5,505
  - 8 El-Monofia
- 1.
- 1. C
- 2.B
- 3. B

- 4. C
- 5. C
- 6. C

7. B

2.

- 1, 648,000
- 2.7

3. 1 R

- 2. 0 5 A
- A F 6. D

- 4. 8
- 5 1
- 4. B A 90

- 7.6.000
- 8, 30

3.

- 1 (
- 2. A
- 3 C

3 32

- A R
- 5. B
- 6. D

7. C

4.

- 1.  $352 \times 6 = 2.112$
- 2. The remaining distance = 874 359 $= 515 \, \text{km}$
- 3. Factors of 25:1,5,25

Factors of 35:1,5,7,35

Common factors: 1,5

G.C.F:5

- 4. Each friend will get =  $92 \div 4$ 
  - = 23 stickers

# 9 El-Gharbia

1.

- 1. B
- 2. D
- 3. C

- 4. C
- 5. D
- 6. D

7. C

2.

- 1. zero
- 2. 2.132
- 3.10:07

- 4.4
- 5. 50
- 6. 28

- 7.24

- 8.6 360

- 7 C
- 4.
- 1. The arrangement is: 42.695 7,986,362 , 32,968,327 , 38,257,967
- 2. Factors of 12:1,2,3,4,6,12
- $3.46 \times 3 = 138$
- 4. The area =  $5 \times 5 = 25 \text{ km}^2$

# 10

# El-Dakahlia

- 1.
- 1 B 4. B

- 2 ( 5. C
- 3. A 6. D

- 7. C
- 2.
- 1, 105
- 2, 240
- 3. 32.032 6. 4

- 4, 4,433
- 5. 2
- 8, 28 7, 90,000
- 3.
- 1 (

- 2. D 5. C
- 3. D 6. C

- 4. A 7. B
- 4.
- 1. She had =  $16 \times 4 = 64$  marbles
- 2. The number of students
  - $= 72 \div 8 = 9$  students
- 3. The perimeter =  $2 \times (4 + 8) = 24$  cm
  - The area =  $8 \times 4 = 32 \text{ cm}^2$
- 4. 45 liters = 45,000 milliliters

11	Ismail	lia
1.		
I. C	2. B	<b>3</b> . D
4. A	5. C	6. C
7. A		
2.		
1. 2	2. 132	3. 46,000
4. 6	5. 2,450	<b>6.</b> 20
7. 25	<b>8</b> . 500	
3.		

3. C

6. A

# 7. C

1. D

4. A

1. Factors of 12:1, 2, 3, 4, 6, 12
Factors of 18:1, 2, 3, 6, 9, 18
Common factors:1, 2, 3, 6
G.C.F:6

2. B

5. C

**2.** He paid =  $123 \times 6 = 738$  pounds

3.  $125 \div 5 = 25$ 

4. 35,425

# 1. 1. A 2. C 3. C 4. C 5. D 6. D

7. C

2.			
1. 121	2. 90	3.845	
4. 48	5. Thousands		
6. 19	7. 6,350	8. 22	
3.			
1. A	<b>2</b> . B	3. B	
4. A	5. C	6. C	
7. B			
4.			
1. a. 75	<b>b</b> . 123		
2. Factors	of12:1,2,3,4	4,6,12	
Factors	of8:1,2,4,8		

3. The area =  $5 \times 5 = 25 \,\text{m}^2$ 

G.C.F: 4

Common factors: 1,2,4

4. Ahmed read = 286 + 154 = 440 pages

13	Damietta		
1.			
1. A	2. B	3. A	
4. C	5. D	6. B	
7. A			
2.			
1. 7	2. 3,250	3. 4	
4. 71	5. 2,000	6. 2	
<b>7.</b> 20	8. 10		
3.			
1. C	2. B	3. A	
4. B	5. B	6. D	
<b>7</b> . B			

# Answers

# 4.

- 1. a.x + 2.164 = 5.398
- b. 3 234
- 2. Factors of 9:1.3.9
  - Factors of 12:1,2,3,4,6,12
  - Common factors: 1,3
  - GCF:3
- 3.  $239 \times 7 = 1.673$
- 4.  $L = [16 \div 2] 3 = 5 \text{ m}$

# Kafr El-Sheikh

# 1.

- 1. D
- 2. B
- 3. A 5. A
- 4. D
- 7. A
- 2.
- 1. 8.753
- 2, 1,225,458,000
- 3. 12 associative
- 4. 22,000

- 5, 1,000
- 6. 5
- 7, 51

6. A

- 3.
- 1. A 4. C
- 2. D
- 5. A
- 3. C 6. A

7. C

# 4.

- a. The order is: 700 thousand 1 million 9 million and
- 700.540.275
- 2. a. The perimeter =  $[10 + 12] \times 2$  $= 22 \times 2 = 44 \text{ m}$ 
  - b. The area =  $10 \times 12 = 120 \text{ m}^2$
- 3. Ahmed paid =  $240 \times 6 = 1,440$  pounds
- 4. The share of each one = 95 ÷ 5 = 19 L.E.

# 15 El-Beheira

- 1.
- 1. A
- 2. C
- 3. R

- 4. C 7. C
- 5. A
- 6. C

- 2.
- 1. 1.197
- 2. 0
- 3.1

4. 37

7.800 + 90 + 2

- 5. 7.077
- 6. 4.300 8.3

- 3.
- 1. C
- 2. B 5. C
- 3. A 6. A

- 4. C 7. D
- 4.
- 1. The area =  $6 \times 6 = 36 \text{ cm}^2$
- 2. He saves = 145 x 4 = 580 L.E.
- 3. Factors of 8:1,2,4,8

Factors of 12:1 . 2 . 3 . 4 . 6 . 12

Common factors: 1,2,4

GCE:4

4.  $852 \div 6 = 142$ 

#### 16 El-Fayom

- 1.
- 1. C
- 2. B
- 3. D

- 4. A
- 5. B
- 6. B

7. D

#### 2.

- 1.1
- 2 120 3. 13.000

6.9

- 4 48 5 0
  - 8,1,353

# 3.

7. 5

- 1. C 2. C
  - 3. D 5 C 6. A
- 4. A 7. C

# 4.

1. Factors of 12:1.2.3.4.6.12 Factors of 18:1.2.3.6.9.18

Common factors: 1,2,3,6

- G.C.F.: 6
- 2. The number of bottles = 32 ÷ 8 = 4 bottles
- 3. 26 4, 305

# El-Menia

# 1.

- 1. D 2. B
- 3. C

6. D

3, 128

6. 3,000

- 4. A 5. B
- 7. B

#### 2.

- 1. 2 4.4
  - 2. 37
  - 5. 3
  - 8. Millions
- 3.
- 1. B

7.40

- 2. A
- 5. C
- 3. B 6. C

4. B 7. B

- 4.
- 1. The perimeter =  $[6+2] \times 2$ =8×2=16cm
- 2. Factors of 10:1,2,5 and 10
- 3. The order is: 14.567, 24.567 , 34.657 , 45.657
- $4.16 \times 3 = 48$

#### 18 Souhag

# 1.

- 1. A
- 4. C
- 7. A
- 2.
- 1, 35,000 4. 32

7.4 -800

- - 5. 312
    - - 8. 8

2. 69.066

2. C

5. A

- 1. B 4. B

3.

- 2. D
- 5. D
- 3. B 6. D

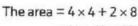
3. C

6. D

6. 1

3, 78,000

- 7. A
- 4.
- 1. The number of ants = 142 + 164= 306 ants
- $2.98 \times 4 = 392$
- 3.45 liters = 45.000 milliliters
- 4. The perimeter
  - =8+6+4+4+4+2
    - = 28 cm



$$= 16 + 16 = 32 \text{ cm}^2$$

Ca



19	Aswan	
1.		
1. B	2. B	3. C
4. D	5. A	6. C
7. D		
2.		
1. 15	2. 235,180	
3. 1,000,000	4. 940	5. 890
6. 3	7. 13	8.1
3.		
1. B	2. C	3. A
4. B	5. B	6. C
7. D		

# 4.

- 1. The order is: 984,610 ,1,945,321 ,2,457,287 ,5,000,000
- 2. Factors of 10:1,2,5,10 Factors of 15:1,3,5,15 Common factors:1,5

G.C.F: 5 3. x = 869 - 543 = 326

4.844 ÷ 4 = 211

20	South Sinai		
1.			
1. C	2. 6	3. D	
4. D	5. B	6. C	
<b>7.</b> C			
2.			
1. 24	2. 800	3. 36,000	
4. 5,000	5. 2	6. 24	
<b>7</b> . 30	8. 10		
3.			
1. B	2. B	3. D	
4. C	5. D	6. C	
<b>7.</b> C			

- 4.
- 1. The number of left pages = 400 125 = 275 pages
- 2. Factors of 40:1,2,4,5,8,10,20,40

Factors of 50:1,2,5,10,25,50 Common factors:1,2,5,10

G.C.F:10

- 3. The area =  $20 \times 8 = 160 \text{ cm}^2$
- 4. The number of ants = 145 + 162 = 307 ants